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ABSTRACT

This report describes a program for increasing reading test scores. The targeted population consisted of one second-grade, one third-grade, and two fourth-grade classrooms in a growing middle class community located in a far western suburb of Chicago, Illinois. The problem of low reading test scores was documented though the 1995 IGAP scores on which the targeted school scored the lowest of all schools in the district. Analysis of probable cause data revealed: (1) readers lacked quality time spent practicing reading at home and in school with teachers and students; (2) children with high test anxiety had significantly lower scores; (3) since literacy learning is individually developmental and proceeds through a number of predictable stages, developmental lag can occur; (4) students in low socioeconomic communities may demonstrate lower achievement, but can raise it with modifications; (5) how students use their prior knowledge and experience to help them understand text influences what they recall from a test; (6) students are unable to comprehend and connect reading to their life; (7) poor decoding and comprehension skills result in lower test scores; and (8) children are poor test takers. A review of solution strategies suggested by experts, combined with an analysis of the problem setting, resulted in the selection of the following intervention: altering curricula by teaching to the multiple intelligences, creation of portfolios for students and teacher evaluation, and the implementation of student reading logs. Post intervention data indicated an increase in reading test scores. Students also demonstrated the ability to make connections with what they were reading to their own lives. Because students spent more time reading and reflecting on what they had read, comprehension and higher level thinking skills increased. (Contains 41 references and 16 tables of data, which are not sequentially numbered. Appendixes contain survey instruments, lesson plans, assessment forms, checklists, and graphic organizers.) (Author/RS)

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IMPROVING READING THROUGH THE USE OF MULTIPLE INTELLIGENCES

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Abstract

This report describes a program for increasing reading test scores. The targeted population consisted of one second grade, one third grade and two forth grade classrooms in a growing middle class community. This community is located in a far western suburb of Chicago. The problem of low reading test scores was documented through the 1995 IGAP Scores on which the targeted school scored the lowest of all schools in the district.

Analysis of probable cause data revealed: 1) readers lacked quality time spent practicing reading at home and in school with teachers and students, 2) children with high test anxiety had significantly lower scores, 3) since literacy learning is individually developmental and proceeds through a number of predictable stages, developmental lag can occur, 4) students in low socioeconomic communities may demonstrate lower achievement, but can raise it with modifications, 5) how students use their prior knowledge and experience to help them understand text, influences what they recall from a test, 6) students are unable to comprehend and connect reading to their life, 7) poor decoding and comprehension skills result in lower test scores, 8) children are poor test takers.

A review of solution strategies suggested by experts, combined with an analysis of the problem setting, resulted in the selection of the following intervention: altering curricula by teaching to the multiple intelligences, creation of portfolios for student and teacher evaluation and the implementation of student reading logs.

Post intervention data indicated an increase in reading test scores. Students also demonstrated the ability to make connections with what they were reading to their own lives. Because students spent more time reading and reflecting on what they had read, comprehension and higher level thinking skills increased.

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The students of the targeted second, third and fourth grade classes are exhibiting low standardized reading test scores. Evidence for the existence of the problem includes the 1994-1995 IGAP test results on which the targeted school scored the lowest of all five elementary schools in this district.

The Immediate Problem Context

The elementary school where the action research took place is a kindergarten through fourth grade facility. It has a student population of 762 students. The district, itself,consists of five other K-4 buildings that feed into one 5-6 building and then a single junior high school.

The student population of the targeted school is 71.9% White, 17.3% Asian/Pacific Islander, 5.5% Black, 4.9% Hispanic and 0.0% Native American. Eight and five tenths percent of the students are Limited English Proficient (LEP). Low income students account for one and six tenths percent of the population. This school has an attendance rate of 95.2%. Presently there are no chronic truants at this attendance center. The student mobility rate is 11.2%. The targeted school has a special education resource population of 16 students with IEP's. The speech therapist helps 54 students.

This school's staff which is 100% White, consists of; one principal, one assistant principal, twenty-eight kindergarten through fourth grade teachers, with one aide for an inclusion student, one librarian and two full-time library assistants, one part-time library aide, one full-time and one part-time physical education teacher, one full-time and one part-time music teacher, one part-time social worker, one full-time and a part-time speech therapist, one full-time reading coordinator, one full-time special education resource teacher, one part-time psychologist, two full-time bilingual aides, two Bright Start teachers, two high-risk first grade reading aides; one who is available full-time and one part-time. Auxiliary personnel include two secretaries, one part-time nurse, one part-time health aide and three custodians. One gifted coordinator is available on a weekly basis to work with third and fourth graders for one hour.

The teaching staff at this school has an average of ten years teaching experience. Twenty-six percent of the teachers hold a Bachelor's degree, twenty-nine percent have a Bachelor's degree with an average of twenty-three extra hours, 24% of the teachers have a Master's degree and 18% have a Master's Degree plus an average of thirty-one extra hours. The average teacher salary at this building is $33,084.

The average time allocated to core subjects per day include the following: forty-five minutes devoted to mathematics, thirty minutes to science, thirty minutes devoted to social studies, and one hundred-fifty minutes devoted to a language arts block which includes reading, writing, English, spelling and penmanship. This school provides weekly computer-assisted instruction, art instruction and health instruction. The average class size is 26.1 students.

The school is currently using a literature-based basal reading series, classroom novel sets and an Australian based paperback series for high-risk readers. English and language instruction are based on a basal language text along with Writer's Workshop as outlined in the Illinois Writing Project. Spelling instruction is provided through a program developed by district teachers and through a basal program based on high-frequency words.

On the IGAP tests in 1988 the targeted school scored 285 in a score band of 271-299. The state score was 250 during the same period. The following year, 1989,the score dropped to 281 with a score band of 267-295. In 1990 the score again dropped ten points to 271 with a score band of 257-285. A significant drop occurred in 1991 during the redistricting of our school population coinciding with construction of the largest school in our district. We were also undergoing the transition from an involved principal who demanded total excellence to a principal who was much more relaxed and less involved with what was occurring in the classroom. During this redistricting process, we noticed that many of our involved PTO parents left our school.

The District

This elementary school is part of a school district located in the Chicago suburbs. The administrative staff includes one school superintendent, one director of curriculum and instruction who doubles as assistant superintendent, one assistant director of curriculum and instruction, one director of personnel, one director of special education, one supervisor of operations and maintenance and one business manager. The average administrative salary is $76,467. The district population is 81.3% White, 10.7% Asian/Pacific Islander, 4.1% Hispanic, 3.6% Black and 0.3% Native American.

The Surrounding Community

According to the 1990 census, the median family income is $51,537. The median per capita income is $17,950.

Twenty-seven point three percent of our neighborhood population are college graduates, while eighty-seven point five graduated from high school. According to the 1990 census out of a population of 100,537 it was found that 53,079 individuals are employed. The community occupations include 32.4% who are in service-occupations, 15.2% sales administration, 11.8% operators-labor, 10.7% production-repair, and 0.8% farming-forestry. Twenty-nine and one-tenth percent of the people are unemployed.

There are a total of 35,362 housing units in this community. Forty-six point one percent were built between 1970-1979. Of the available housing, 65.9% is owner occupied, 23.1% is renter occupied and 10.9% is condominium housing.

Regional and National Context of the Problem

National media attention has parents and educators in an uproar over the decline of standardized test scores. Over the years psychologists have assumed that intelligence was a single entity and that intelligence could be measured by a single paper and pencil instrument. Such a test only measures one or two intelligences. Intelligence is exposed in the method of processing that the student uses to problem solve.

Howard Gardner states,"The sins of intelligence and achievement testing reflect cultural biases favoring linguistic and logical-mathematical intelligences." He defines intelligence "not as doing well on a test or memorizing the fifty state capitals, but as solving a problem or creating a product that is valued in a culture" (Gardner, 1994). Using this authentic assessment to measure the process and product would be a more accurate test of all students total intelligence.

As a Harvard graduate, Gardner's mentor was the great psychologist, Erik Erikson. Gardner's ideas about multiple intelligences evolved from his research in studying gifted children and victims of brain damage. After years of studying, he developed the theory of many intelligences. Gardner observed that there were seven intelligences: verbal/linguistic,visual/spatial, mathematical/logical, musical/rhythmic, bodily/kinesthetic, intrapersonal, and interpersonal. He went on to group these into three categories: language-related, personal-related, and object-related (Chapman, 1993). Gardner believes that each intelligence is of equal intrinsic value.

Over the last ten years Gardner's theory of the Seven Intelligences has created an atmosphere conducive to students becoming more engaged in their own learning (Gardner, 1983). Research supports the belief that most students are capable of learning but that they learn in different ways. When they are taught in a manner that is compatible with their learning styles, their standardized test scores in several academic areas increase (Dunn, 1995).

Gardner's study shows that gifted children excel in one or two particular capacities, but brain damaged children lose certain abilities they once possessed. Marion Diamond's regenerative brain research theorizes that the brain grows dendrite connectors which prevent atrophy of brain tissue in an enriched environment (Kline, 1996). Therefore, when educators endeavor to develop all of a child's multiple talents, they are helping to sustain and stretch the dendrites in the weaker intelligences by making connections to the increasingly stronger intelligences. "We can increase thinking capability by making connections and using holographic thinking" (Pribram, 1992).

Understanding multiple intelligences also leads to a reduction of teacher and student frustration. This theory's implementation elevates student achievement and enhances personal self-concept. This allows the teacher to accommodate a variety of learning styles within one classroom. When the child's creative outlet is satisfied, communication with parents, counselors, staff members and administrators improves (Reiff, 1992). Here students take ownership of their own learning because they can be successful in the intelligence in which they shine. As students feel more successful, they have higher self-esteem, become greater risktakers, learn to interact with others in group situations and begin thinking and making connections on a higher level.

Another opinion about the brain's link to intelligence comes from David Lazear. He states that "Human beings probably use less than one percent of the brain's potential. Intelligence is not fixed or static; intelligence can be learned and taught; and intelligence is a multi-dimensional phenomenon that occurs at multiple levels of the brain/mind/body system" (Lazear, 1992). The problem of low reading test scores may be addressed by teaching. These findings offer educators great hope. Teaching to a child's many intelligences may enhance his or her ability to use more brain power which may then transfer to higher reading test scores.

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

In order to document the existence of the problem of low reading scores, we compared IGAP reading scores over an eight year time span with the test results of other schools within the district. As we analyzed these results it became apparent that there was an increasing number of students not meeting the state reading goal and learning outcomes.

In examining the State Goals and Learning Outcomes we found that 20% to 35% of our students do not meet standards (LOA - Table 1). While reading scores have gone down, math scores at the targeted school have gone up twenty points. Another variable that might be considered in our problem evidence is that our mobility rate is 11.2 percent.

Table 1

Learning Outcomes Assessment (LOA) - Language Arts - Elsie Johnson School

Goal 1: Read, comprehend, interpret, evaluate written material.

Outcome: Construct literal, interpretive, and evaluative meanings of a variety of written texts by applying reading strategies. Cut Scores

Does Not Meet	Meets	Exceeds	Meets	Exceeds	Total
0.32	0.43	0.25	14	16	16

Goal 2: Listen critically and analytically.

Outcome: Use listening skills to recall important ideas expressed in oral messages and evaluate these messages. Cut Scores

Does Not Meet	Meets	Exceeds	Meets	Exceeds	Total	0.2
24	56	5	6	6		

Goal 3: Write standard English in a grammatical, well-organized and coherent manner.

Outcome: Write for various purposes using accepted conventions of English demonstrating focused, logical organization, and support of ideas. Cut Scores

Does Not Meet	Meets	Exceeds	Meets	Exceeds	Total
0.26	0.57	0.17	7	11	11

Goal 4: Speak effectively in formal/informal situations to communicate ideas & inform and to ask and answer questions.

Outcome: Speak clearly, expressively and effectively in formal and informal situations.

Cut Scores

Does Not Meet	Meets	Exceeds	Meets	Exceeds	Total
0.3	0.59	0.11	3	5	5

Goal 5: Understand the various forms of significant literature representative of different cultures, eras, and ideas.

Outcome: Understand literary elements and be able to compare and contrast works of literature which are representative of various countries, cultures and historical periods.

Cut Scores

Does Not Meet	Meets	Exceeds	Meets	Exceeds	Total
0.35	0.45	0.2	9	11	11

Goal 6:

Goal: Understand how/why language functions/evolves.

Outcomes: Demonstrate a knowledge of both the evolution of our language and the manner in which it functions effectively. Cut Scores

Does Not Meet	Meets	Exceeds	Meets	Exceeds	Total
0.23	0.24	0.5[illegible]	5	6	6

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Table 1 shows that in every assessed reading goal we have too many students who are not meeting the designated criteria. We are also concerned that there are too few children exceeding in the following goals: 1,3,4 and 5. Twenty to thirty-five percent of the students do not meet the standards. The percentage of our gifted children has dropped considerably in the "exceeds" category.

The following Table 2 shows how student performance in reading declined over eight years. For example in 1988, the targeted school's reading scores were 288. However in 1991 the school score was 260 (Long table). The dramatic drop also indicates a problem. The percentage of gifted children is decreasing in the exceeds category.

Table 2

Longitudinal Comparison of IGAP Scores 1988-1996: Elsie Johnson School

Reading	1988	1989	1990	1991	1992	1993	1994	1995	1996
State Score	259	263	266	258	256	254	255	247	249
School Score	288	284	274	260	275	272	279	269	269
Scale Band	271-299	267-295	257-285	239-275	256-288	255-283	261-297	253-285	253-285

When studying Table 2 the targeted school scores ranged from 288 in 1988 to 269 in 1996, with a notable drop in 1991 to 260. We see an overall downward trend from 1988 to 1996 with two exceptions, 1992 and 1994.

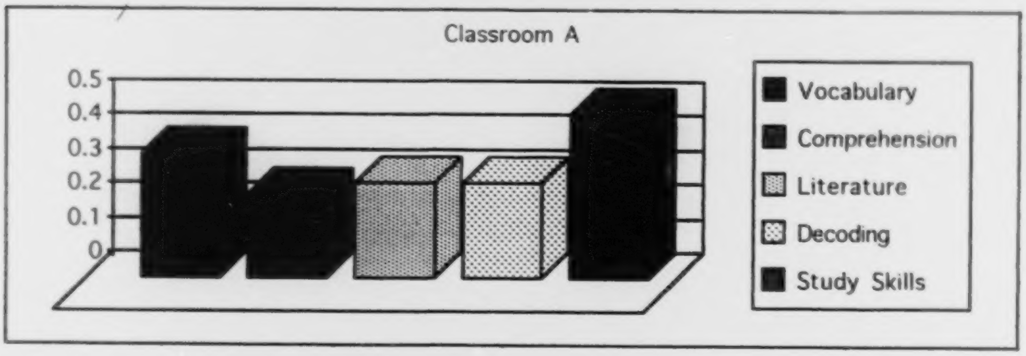
In order to determine an overall baseline for student reading scores, we administered the end of the book Silver Burdette & Ginn Basal reading test to the four targeted classrooms. This publisher designed reading test measurement consists of five basic components: vocabulary, comprehension, literature, decoding and word study skills. We recorded the percentage of students who attained a passing score for each of these categories.

Table 3 indicates that in targeted classroom A, which is comprised of fourth grade students, the percentage of students attaining passing scores are as follows: 36% in vocabulary, 24% in comprehension, 28% in literature and decoding, 48% in study skills.

Targeted Classroom A:

Vocabulary = 0.36
Comprehension = 0.24
Literature = 0.28
Decoding = 0.28
Study Skills = 0.48

Table 3



Analysis of this data shows:

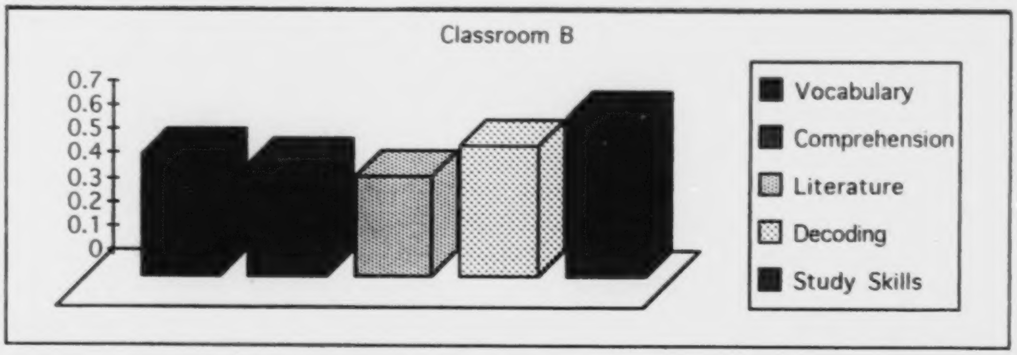
Table 3 represents the results of the pretest of targeted classroom A on the Silver Burdette & Ginn reading test. This classroom has a cluster of students with below average to low average reading ability. This fourth grade room contains five children that come from households that speak more than one language. An instructional aide comes to the classroom for one hour per day to work. Her job description is to work with low ability students in the classroom setting.

Table 4 indicates that in targeted classroom B, which is another fourth grade populace, the percentage of students attaining passing scores are as follows: 50% in vocabulary, 46% in comprehension, 41% in literature, 54% in decoding, and 66% in study skills.

Targeted Classroom B:

Vocabulary = 0.50
Comprehension = 0.46
Literature = 0.41
Decoding = 0.54
Study Skills = 0.66

Table 4



Analysis of the data shows:

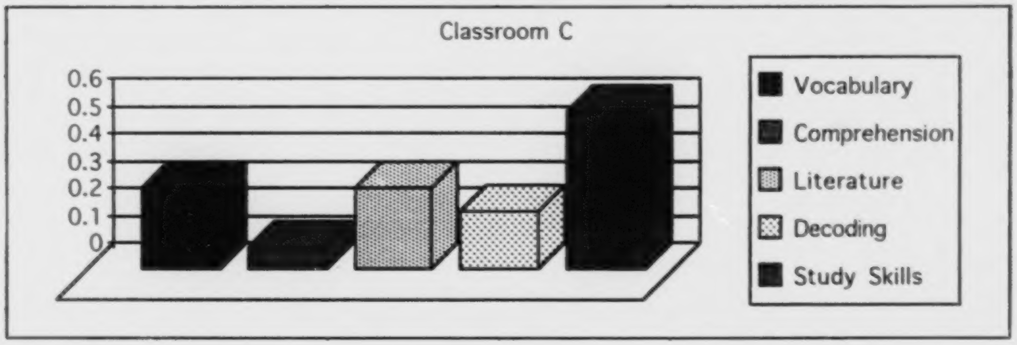
Table 4 represents the results of the pretest of targeted classroom B on the Silver Burdette & Ginn reading test. This classroom has a cluster of four gifted students who are pulled out of the classroom to receive one hour of gifted instruction per week by the gifted coordinator. There are 11 children who speak more than one language at home. Seven different languages are represented in this one targeted room. Only one is pulled out for 20 minutes of ESL instruction on a daily basis. The rest of the students possess average to high reading ability.

Table 5 indicates that in targeted classroom C, a second grade class, the percentage of students attaining passing scores are as follows: 30% in vocabulary, 8%in comprehension, 30% in literature, 21% in decoding and 57% in study skills.

Targeted Classroom C:

Vocabulary = 0.3
Comprehension = 0.08
Literature = 0.3
Decoding = 0.21
Study Skills = 0.57

Table 5



Analysis of the data shows:

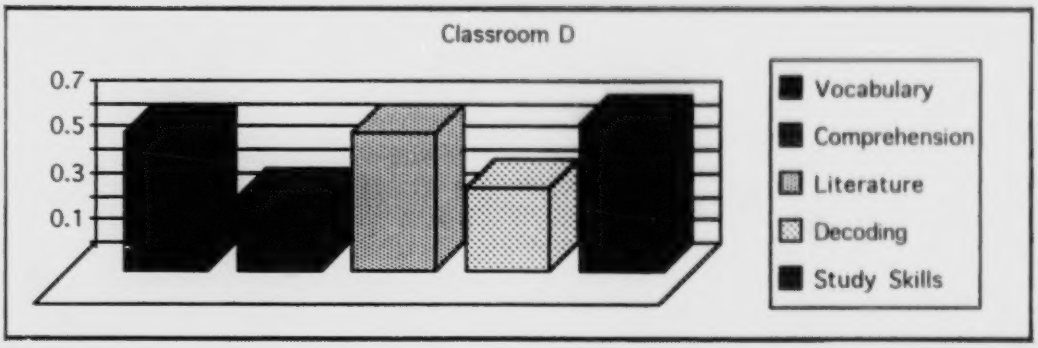
Table 5 represents the results of the pretest of targeted classroom C on the Silver Burdette & Ginn reading test. This second grade classroom is a homogeneous grouping of children with five gifted students, four students who have English as a Second Language and five students with low reading abilities. The pretest given was an end of book test from the Silver Burdette & Ginn series. These students had no prior training or experience in first grade with taking tests, and thus hadn't developed the strategies and skills needed to take this test with a higher score result.

Table 6 indicates that in targeted classroom D, a third grade class, the percentage of students attaining passing scores are as follows: 50% in vocabulary, 46% in comprehension, 41% in literature, 54% in decoding and 66% in study skills.

Targeted Classroom D:

Vocabulary = 0.6
Comprehension = 0.32
Literature = 0.6
Decoding = 0.36
Study Skills = 0.64

Table 6



Analysis of the data shows:

Table 6 represents the results of the pretest of targeted classroom D on the Silver Burdette & Ginn reading test. This class has an identified gifted population of six, and six high ability readers, three non-readers, along with a low ability group. Twelve students in this room come from bilingual homes. Only one receives 30 minutes of ESL instruction daily. An instructional aide comes to the classroom for an hour each day to help low ability students.

Probable Causes

It is extremely important that students learn to become good readers. Reading effects every area of the curriculum and every area of life. In order for students to keep up with the rapid accumulation of information, they must be able to comprehend and use the printed word. Tofler states in Future Shock that information doubles roughly every "three to five years."

There is a lot more to reading than decoding. Real reading involves comprehension, self reflection, application and transfer of knowledge. When students become good readers, self esteem is increased and a new world of opportunities presents itself.

The targeted school used two different reading series. Silver Burdette & Ginn is the basal series used by the entire school population. Children who are one year or more below grade level also use the supplementary Australian published series entitled Rigby (1994). All students are enriched through the use of novel units. A typical story lesson plan, covering a period of 2-5 days, would include reading the story, skill work book pages, some form of comprehension and perhaps a culminating project.

In researching the current literature we discovered many reasons why reading scores decline: 1) Readers lacked quality time spent practicing reading at home and in school with teachers and students. 2) Children with high test anxiety had significantly lower scores. 3) Since literacy learning is individually developmental and proceeds through a number of predictable and well defined stages, developmental lag can occur. 4) Students in low socioeconomic communities may demonstrate lower achievement, but can raise it with modifications. 5) How students use their prior knowledge and experience to help them understand a text, influences what they recall from a test. 6) Students are unable to comprehend and connect reading to their life. 7) Poor decoding and comprehension skills result in lower test scores. 8) Children are poor test takers.

Readers may lack quality time practicing reading at home. Most of our students come from homes where both parents work. Many of our parents are blue collar workers who find it difficult meeting the necessities of life. They are tired, stressed and drained when they get home. Therefore, helping their child set up a regular reading time becomes a major chore instead of a pleasurable, quality experience. "Studies show a negative relationship between TV watching and reading achievement." (Mullis, 1993). A major concern has been that time spent watching TV and playing video games may be displacing time that students could spend on literacy-related activities. In 1993, students who reported watching at least four hours of TV daily displayed lower average reading scores than their peers who watched less TV each day (NAEP, 1994). The findings of this research suggest that children find reading to be less important than viewing TV.

There are several other factors that reduce quality reading time at home. First, our school district feeds from parts of four different towns. However, only one town allows free library access. The other three villages require exorbitant fees to use the libraries that many families cannot afford. Second, libraries are located out of the community making it impossible for children to get there on their own. Third, low socioeconomics prevent some families from acquiring extra reading materials at their level. "Studies have demonstrated the benefits of increasing students' exposure to literacy materials in their homes, especially for low achieving students. Findings showed that when four types of literacy materials were found in the home - magazines, newspapers, encyclopedias and at least 25 books - pupils had higher average reading proficiencies" (Koshkinen, 1995). Lastly, it is easier and cheaper for children to rent videos and electronic games than purchase an expensive library card, as well as find transportation there.

High test anxiety is another reason why students may perform poorly on tests. Great stress is placed on both teachers and students to perform well on standard measures of education. If all the emphasis in the classroom setting is put on academics while the child's needs are neglected, low test-scores ultimately are the result. "Sometimes a too highly academic and efficient school can cause children to perform less well academically than they might otherwise. And in such schools both personality development and attitude towards school may also be negatively affected. The higher the average level of test anxiety in the class, the lower the achievement in the classroom. Anxiety about test performance was seen as having, in most classes, a profoundly detrimental effect on academic performance" (Helmke, 1987).

Anxiety can also spread to students if the teacher is too rigid and demanding. Children who constantly need to attend to academics and nothing else, sometimes develop overwhelming test anxiety, too. Helmke found that "when teachers show a very efficient use of time for academic purposes, without taking breaks to deal with non-academic matters, such as private teacher-to-student conversations, or administrative matters, their classrooms show much greater debilitating effects on achievement from test anxiety. When time management is less strict (when students have some breathing room, when there is not a constant pressure to attend), the debilitating effects of anxiety on achievement are not seen."

It is possible that some students do poorly in reading because they are just not ready to read. Not all children start walking when they reach one year old, as some walk before twelve months, and some walk after. There is an even greater time span involving the age youngsters begin verbal language. Zemelman (1993) "found that all this literacy learning is individually developmental - that is it proceeds through a number of predictable and well defined stages. But while the sequence is roughly the same for all kids, the age rate of change will differ significantly from child to child."

Several factors may insure that a child may become a good reader. When a child is raised in a home where parents read and read to others, the printed word is evident in an array of forms. Literacy is used for experience and success every day. "The connection between leisure reading activities and reading achievement has been established by numerous studies" (Watkins and Edwards, 1992). Part of the reason for this connection may be that students who frequently read for fun not only gain practice in the process of reading, but also are likely to be exposed to a broad scope of topics and situations in their reading that can provide a base from which future reading experiences are enriched and made more meaningful. A child from any socioeconomic background can experience the printed word and become a good reader. With the use of libraries and newspapers this child can experience literacy and grow from it.

Teachers can show parents how simple it is to incorporate literacy building in the home. The teacher can encourage the parents to see that they could use many resources available; people resources, neighbors or relatives could all lend a hand taking part in helping a child experience print rich material. The job need not be squarely placed on one person's shoulders.

A teacher can help the parents realize that the goal is not to read just strictly "school" material but to read a book, look at a book and just enjoy the experience of a book together with a parent or sibling. The goal is to turn a child on to the joy of reading for pleasure in life, not just studying through a school textbook. A teacher could also set up a system allowing children to take books home from the teacher's class library. Books could be chosen at the child's reading level and by their interests.

Students might then enjoy the experience of those tales with a family member or neighbor.

Unfortunately, there are children that will not have parents embrace literacy at home. So, as an educator, a teacher needs to create that kind of literacy experience in school. The teacher or older students from within the school should read one on one with this child. The school cannot be the parent, but the teacher can fill in the literacy experience for the child. No child can afford to fall through the cracks and miss the gift of experiencing the joy of reading books.

Research is discovering that parents who have greater communication skills in low socioeconomic homes may help increase their child's reading achievement. The items measured included parent/child reading time at home, conversations, and note writing. In 1982, Reginald Clark "studied the development of literacy among Hispanic, African-American and White fourth graders. More than 400 family characteristics were explored in his study of thirty-two urban low-income families in order to find out why some low-income students achieved well and others did not. The critical influence of the family on the school achievement of children was confirmed: families prepared the way, educationally speaking, for the child. Those who read to others, are read to and questioned, hold conversations and write notes at home, gain an edge in language use. The parents of low achieving students often are described by researchers as "uncommitted and lacking in motivation and skills to help their children in school work. Between the homes of high and low achieving children,conversations differed in both quality and quantity.

Whether it was during television viewing, a leisure activity, or discussions of homework, the parents of high-achieving students were much more likely to actively instruct their children and provide them with feedback. Parents of both kinds of students did not differ at all in their desire to help their children or in their expectations of them. Some parents, however, simply did not possess the skills to foster their child's school achievements. Often times the parents of low-achieving students were themselves low-achievers for whom school was a painful experience."

Another cause for poor reading scores is the students' lack of prior knowledge and experience. Imagine the difficulty of reading a story about Thanksgiving if you were from a different country. Many teachers begin a story immediately without utilizing any prereading strategies to draw upon the students' prior knowledge. Donna Ogle (1986) suggests that "the most neglected part of a basal reading lesson is that which instructs the teacher to elicit children's background knowledge. To help teachers honor what children bring to each reading situation and model for their students the importance of assessing appropriate knowledge sources before reading, we have developed a simple procedure (K-W-L) that can be used with non-fiction selections at any grade level and in any content, whether in reading groups or in content learning situations." This is another way to help students make connections in reading. It also helps to peak student interest before you begin the story.

Students who are unable to comprehend what they read and connect this content to some part of their life may score low on reading tests. If a student does not understand what he is reading, it is impossible to glean anything from the text. The most often repeated quote from a student is, "I don't understand what I just read." "The emphasis on strategic thinking in reading starts with a deliberate attempt to connect previous knowledge to the subject or theme of the text. Teachers should encourage children to open their minds to their prior knowledge, and to build background that prepares them for the topic at hand. This sense of connectedness is often referred to as schema building - a process of creating the links and the frameworks that will make it feasible for children to comprehend what they read" (Anderson, Heibert, Scott, & Wilkinson, 1985).

Perhaps the student simply has read the passage too fast to see what it says. A child with low sight vocabulary will not understand the text. The text may be filled with too many hard words making it too difficult for the child. Passages may be entirely too long for the child to stop and think about what was read. Teachers may not teach comprehension strategies to help correct any or all of the above scenarios. As a result, students become frustrated because they feel inadequate and unsuccessful. They frequently just turn off to reading altogether. Without comprehension it is impossible to connect what one is learning and reading to other areas of life. Therefore, if someone does not know what they are doing, it goes without saying that test scores will regularly be low.

When children experience this process, and connect the two knowledge experiences, they will remember the new knowledge, not just memorize it for a test! That connection allows them to bridge highly personal experiences with each other. When this occurs they have true learning.

The lack of acquiring decoding and listening skills through phonics may be a probable cause that may have hindered the targeted students from attaining higher test scores. "Test scores, many of which measured the presumed subskills of reading, when looked at over the long term were remarkably stable. In the 50's and 60's most children learned how to decode simple print. But we did not create a nation of mature, effective, voluntary, self-motivated, lifelong readers; on the contrary, most Americans gladly stopped reading the moment they escaped from school" (Zemelman, 1993). The drill and kill teaching method with phonics alone may increase word calling, or sounding out words phonetically but without understanding the meaning. The verbal pronunciation may trigger comprehension and therefore higher test scores, but it does not make a child transfer the enjoyment of reading to life.

Our district implements the Silver Burdette & Ginn reading series as its basal text. This series includes the phonetic strategies of: consonants, consonant clusters, digraphs, short and long vowels, variant vowels, using inflections, plural nouns, possessives, endings, contractions, compound words, spelling changes, suffixes, and prefixes and root words. Some other strategies encourage students to decipher unknown and longer words in several ways: 1) Say the word blending the sound. 2) Look for syllables and vowel sounds. 3) Look for picture clues. 4) Look for the words within a word and word parts that you already know. 5) If the word doesn't make sense, try other vowel sounds.

6) Read the rest of the sentence for context clues. These strategies may enable children with personalized life long tools to decipher new words but may not excite them about reading for pleasure.

"If someone is a poor reader, then he or she must be either a poor decoder, a poor listener, or both" (Juel, 1986). Poor decoding phonetic skills may be a cause in lower reading test scores. If children can't decipher new or unknown words they may miss the meanings of those words by guessing from the context of the sentence and thus, comprehension would be lost for that passage.

We have learned from past dealings with teaching phonics that children showed disinterest in this approach. Children may think that completing many worksheets is boring. The price of paper makes reproducing phonic worksheets expensive. The slow methodical growth and repetition may turn kids off to reading. It is a slower method of reading. Children may feel bogged down and forced to look at a word until its meaning is unwrapped. The slow speed of their reading compared to their classmates may make them feel different and awkward. Tracking due to phonic prowess may lower self-esteem for those not in the high group, which causes less risk taking and less comprehension. A slower plodding pace means comprehension might occur at a slower rate. Phonics may take the child's thinking off the context of the meaning of the piece and thus comprehension is missing if the child is only word calling. If less phonics has been taught to these students, and phonics is a possible cause for low comprehension test scores in reading, then we need to utilize more games in the teaching of phonics to motivate children to apply phonics strategies.

Some children are simply poor test takers. They may study continually, but still perform badly when assessed. They have either not been taught how to take a test or have not yet developed the skills of eliminating wrong answers, reading directions carefully or using the test itself as a guide for correct answers. If questions are asked in a different way, or from a different perspective, students may clutch on that particular test. G.E. Samson found (1985) "Test-wiseness exists independent of the actual knowledge a person has about a subject matter. All we know now is that students have greater success after some general coaching in areas of test taking skills related to the specific test that is of interest. Although an optimum training curriculum cannot now be identified, one clear pattern did exist; those programs that had extensive duration, lasting from five to seven weeks had greater effects than did shorter programs, lasting one to five days."

Most reading instruction and assessment is directed toward the verbal linguistic intelligence. When teachers begin to involve more of the students' intelligences in their teaching of reading, perhaps more students will be more successful.

There have been many probable causes suggested for low reading test scores on standardized tests. Suggested probable causes are:

1. Lack of quality time reading at home, in school and with peers.
2. Lowered score may be due to high test anxiety;
3. Some children have slower biological developmental time clocks.
4. Students from lower socioeconomic environments may have families lacking in verbal linguistic skills causing less transfer to occur or develop.
5. Students using prior knowledge skills before reading a text may perform better.
6. Students are unable to comprehend, and connect reading to their life.
7. Poor decoding and comprehension skills may cause lower test scores.
8. Some children may be poor test takers.

CHAPTER 3

THE SOLUTION STRATEGY

Review of the Literature

Many experts proposed solutions to the problem of low national test scores on reading. The research continually stated that much of the problem stems from the fact that a student is evaluated simply by a paper and pencil test. Such tests merely measure students' verbal or mathematical skills. Gardner and his Harvard colleagues gleaned that individuals possess and learn in more than two intelligences. "Multiple intelligence theory allows one to access the talents and skills of the whole individual" (Gardner, 1993). For students to succeed on tests, it is the educators responsibility to find each child's special intelligence(s) and provide them opportunities to learn in those intelligences (Chapman, 1993).

The decline of reading test scores extends to much more than the test. Since the main purpose of being able to read well is to comprehend by interacting with the printed word, students need to spend more time on task reading at home and at school. "Both research and experience show that children's academic and social development is enhanced when parents reinforce what is taught at school. Parent workshops on new or existing curriculum on discipline, and even on parenting skills can all help in a child's overall development" (Meyers and Beall, 1992).

Current research implies that comprehension is a global, language-based process, comprised of vocabulary knowledge and an understanding of the printed material. Comprehension comprises many issues such as; prior knowledge, self-monitoring, or metacognition and the schema theory. "Reading comprehension is an interactive process that requires the use of the prior knowledge a reader has in combination with the reading material. The more extensive a reader's prior knowledge, the less he or she has to rely on the printed material" (Miller, 1995). Thinking about thinking, or one's self-reflection in efforts to comprehend what is read, is called metacognition. Good readers perform this self-monitoring process well, however, poor readers need to develop this important trait to decide whether print makes sense. How one stores information in one's mind, how that information is used and how new learning occurs, are the components of the schema theory.

Some different levels of comprehension are textually explicit, textually implicit, critical reading, and scripturally implicit comprehension. Textually explicit comprehension means the child responds to questions found within the reading passage. He locates main ideas that were directly stated, finds significant details, places items in sequential order and reads and carries out directions. Textually implicit comprehension asks the reader to decipher answers from reading the passages. Here the student will draw conclusions and generalize, predict outcomes, summarize, sense author's mood and purpose and locate implied main ideas. Critical reading causes the reader to evaluate the printed word. He must separate fact from fantasy, understand accuracy or truthfulness, compare several printed sources, sense author's biases and recognize propaganda. Scripturally implicit comprehension calls the reader to combine prior knowledge with written words to conclude new knowledge or actions. He must apply knowledge learned from reading to problem-solving, comparing a personal problem with one read about, render follow-up activities such as art, rhythm, baking, construction, dramatics, puppets, experiments, book reports creative writing and poetry (Miller, 1995).

Time given to reading must also include discussing the material with others. "Studies have documented that frequent reading discussions are associated with higher reading proficiency (Christenson, 1992). Conversations may stimulate rereading to see on which points students agree or disagree. It may help to redirect thinking if passages have been misread or misinterpreted. Following verbal illumination of the text, children should quietly reflect on what they have read to see how it applies to their life experience. Such reflection makes the printed word more meaningful.

When a child reflects on his or her readings, what is experienced through those readings takes on a personal meaning. As stated clearly in If Minds Matter I (Costa, Bellanca, & Fogarty, 1992). If a child has experienced reading for transfer, this child can apply the content being taught to other subject areas, apply it to passed experiences or implement it in future events.

Relevant application and use of transfer increases dramatically when the skill is taught by the instructor. Two strategies can be used to teach this skill. They are referred to as "hugging and bridging" (Fogarty, 1989). The " hugging" technique has a child apply and practice the very skill being taught, such as having a child practice driving in a simulator before actually going out on the road. The "bridging" technique describes a child applying the skill to a prior experience or a future possibility. An example of bridging would be as follows: the teacher reads a piece of literature with a theme of determination. A child could then be encouraged to transfer this theme into his or her own life by recalling a time when he or she needed to feel determined to reach a particular goal. "By teaching for transfer, and allowing a child to take risks, the child will hopefully be learning, not for a test but for a lifetime" (Fogarty, 1989).

Another issue to which some attention must be given concerns students that are not developmentally ready to read. The scores of these students are included in the band of school scores on all state tests. Controversy exists about whether or not anything can be done to remediate this problem. In many cases reading difficulties seem due chiefly to a developmental lag, and as the child grows older, the condition spontaneously disappears. In The Shattered Mind, Howard Gardner proposes that some developmental reading problems were caused by the two hemispheres of the brain competing for dominance with no clear division of labor between them. Nevertheless, teachers can provide an experience rich environment to promote growth for all students. Gardner discovered in his research with brain damaged adults the complexity of the reading process. He concluded that there is no single remediation that will help every child or adult. "It is my impression that just as a variety of methods of teaching creative writing, athletics, or mathematical competence have been involved to suit widely divergent skills and personalities, so the therapist of reading disorders will similarly require an armamentasium (plethora) of techniques respectively suited to different kinds of disorders" (Gardner, 1989).

Research also shows that test anxiety can be reduced or completely eliminated if alternative evaluation methods can be found. Thomas Armstrong states that "any subject can be assessed in at least seven different ways" (Armstrong, 1994). Authentic assessments or culminating projects can be designed that will also show what the child has learned. The student can explain what was done and what was learned, as well as, be questioned by the evaluator in a one-on-one situation. This type of evaluation looks at the whole metacognative process instead of isolated facts which may easily be misinterpreted by the test taker. Individuals are given opportunities to show not only what they know, but also what they can do (Burke, 1994).

Improving reading comprehension is likely to improve reading test scores. "Reading means getting meaning from print. The essence of reading is a transaction between the words of an author and the mind of a reader, during which meaning is constructed. This means that the main goal of reading instruction must be comprehension" (Zemelman, Daniels, Hyde, 1993). Due to the wide variety of reading difficulties, various strategies must be used to reach the largest number of students. Teachers must build the background knowledge surrounding the stories children read so they can connect them with something else they have learned. Some comprehension strategies that help expand these connections are KWL (What we Know, Want to Know, and Have Learned), DRTA (Directed Reading-Thinking Activity), and QAR (Question Answer Response Strategy), where students are encouraged to take risks, predict and go outside the basal. The use of graphic organizers like webs, story maps and Venn diagrams integrate what students are learning to their prior knowledge of what they already know. Orally retelling stories and writing summaries allow students to process what has been read. Responding to the printed word through journal writing encourages the student to reflect on, analyze and evaluate what has been read. These higher order thinking skills can only help to bolster both reading comprehension and ultimately reading test scores.

Students who have difficulty taking tests can be taught specific test taking strategies. "Test wiseness exists independent of the actual knowledge a person has about a subject matter. All we now know is that students have greater success after some general coaching in the area of test taking skills" (Samson, 1985). On multiple choice tests, they can be encouraged to guess on every question rather than leave an answer blank. When the individual does not know the correct answer, encourage him or her to make a guess and stay with that answer. Research shows the first guess is often the correct answer. The student should not erase answers, unless he is sure his choices are incorrect. The pupil should try to eliminate some of the possible choices on the test. The child has a greater chance of getting the actual answer correct as the amount of possible responses goes down. Students should also be taught how to read and follow written test directions very carefully.

Bilingual students usually struggle on tests written in English. These children need special ESL classes to help them understand the English language and to progress to all English instruction. Bilingual students lack the prior knowledge in English language structure and vocabulary to make connections in reading especially in non-fiction subjects like science and social studies. Research shows that these individuals are often two years behind their peers. However, when these students are taught two hours a day in their native language, test scores will improve. The theoretical background for second language score deviation is found in an article by Jim Cummins (Review of Educational Research, 1979). The technical manual for the Nelson Denny Reading Test (1993) indicates there is a 2 year lag in isolated vocabulary for ESL students.

A second opinion states that early childhood is not the optimum age to acquire a second language; older children and adults are more efficient language learners. Thus the sense of urgency in introducing English to non-English-speaking children and concern about postponing children's graduation dismissal from bilingual programs are misplaced. Language is not a unified skill but a complex configuration of abilities. Language used for conversational purposes is quite different from language used for school learning, and the former develops earlier than the latter.

Because many skills are transferable to a second language, time spent learning in the native language is not time lost in developing English or other subjects. To the contrary, "a child with a strong foundation in the first language will perform better in English over the long term. Very possibly, bilingualism enhances children's thinking skills. Reading should be taught in the native language, particularly for children who, on other grounds, run the risk of reading failure. Reading skills acquired in the native language will transfer readily and quickly to English, and will result in higher ultimate reading achievement in English" (Crawford, 1991).

Concluding from the research we have found that reading comprehension will improve given the following: 1) the opportunity for more authentic testing and instruction, 2) room and encouragement for transfer, 3) lots of opportunity for retelling and discussion and 4) an experience rich environment. Therefore, we have decided to teach reading comprehension using multiple intelligence strategies.

Project Outcomes and Solution Components

As a result of the use of Multiple Intelligence strategies to increase standardized reading scores during the period of September to December of 1996, the targeted second, third and two fourth grade classes will attempt to show increases in reading achievement as measured by pre and post basal reading tests, portfolios, teacher observation checklists and weekly child self-assessment logs. In order to accomplish this goal the following strategies will be implemented:

1. Parent and student Multiple Intelligence surveys must be developed.
2. The basal reading test must be administered in September and December.

3. A sample Multiple Intelligence lesson plan must be created.
4. Weekly lessons will be developed using all the 7 Multiple Intelligences.
5. A weekly child self-assessment form will be created.
6. Portfolios will be created.
7. A list of weekly tags will be generated for weekly portfolio collection.
8. A teacher made observation check list will be developed for what constitutes good reading.
9. A parent letter will be formulated and sent home outlining our action research and its goals.

In order to achieve the terminal objectives, the following processes are necessary.

1. Compare pre and post test scores to determine growth in reading.
2. Create general awareness of Multiple Intelligence.
3. Determine each child's strength.
4. Design a Multiple Intelligence lesson plan format.
5. Design an on-going reading observation checklist to discern if the students are demonstrating good reading habits.
6. Establish a portfolio for each student to be used as a tool in student/teacher conferencing.
7. List tag categories for each week of things to be included in the portfolio as a means of child self-assessment.

8. Create and distribute a parent letter describing action research and portfolio implementation.
9. Design a simple questionnaire whereby students assess themselves in reading each week.
10. Design projects and rubrics involving each Multiple Intelligence.

Action Plan For The Intervention

This action plan is presented in outline form in a weekly format. This allows each teacher participating in this action research plan time to meet the children's needs as they occur. The schedule covers the time frame that begins with August 27, 1996 as Week 1 (since this is the first date children must come to school), and ends on December 20, 1996 which is Week 17.

Week 1

1. Send home parent Multiple Intelligence survey and action research letter.
2. Students will complete Multiple Intelligence survey.
3. Define Multiple Intelligence to the target classrooms.
4. Give standardized basal reading test.
5. Set up portfolios.

Week 2 - Week 16

1. Teacher will design lesson plans to insure that students experience the Seven Multiple Intelligences in the curriculum during a given week.

2. Students will journal about their reading twice a week across the curriculum in their reading spiral.
3. Students will reflect on their reading problems and achievements using the student self-assessment forms.
4. Students will place tagged assignments into their portfolio on Friday.
5. The teacher will journal weekly in the FBMP journal entry log.

Week 11

1. Students will rotate through seven Multiple Intelligence learning stations.
2. Teacher conferences with each individual student on their portfolio.
3. Continue to follow the routine procedures from Week 2 to Week 16.

Week 17

1. Students will complete standardized basal reading post test.
2. Teacher conferences with each individual student on their portfolio.
3. Routine steps will be followed as usual.

Methods of Assessment

In order to try to determine the effects of the intervention, teacher records will be kept on standardized pre and post basal reading test scores, reading observation check lists will be filed into individual portfolios, students reading journals and weekly child self-assessment forms will also be placed in the portfolios.

This information will be obtained from each participating teacher. Because student work is an integral part of the data, tagged portfolios will be kept. The portfolios will also provide insight into changes students have in attitudes toward reading and increases in their reading achievement.

CHAPTER 4

Historical Description of Intervention

The main objective of this project was to increase reading comprehension through the use of multiple intelligence strategies. At the beginning of the 1996 - 1997 school year a parent survey was sent home to identify their child's strengths in the multiple intelligences. The same survey was also administered to the students at school. During the first week the researchers gave the End - of - Book Silver Burdette & Ginn reading test as a growth comparison baseline for each student's reading comprehension. Upon completing these tests we began creating a general awareness of the multiple intelligences in each classroom. The strategies we selected to help us accomplish this goal were: 1) designing and implementing fourteen weekly MI lesson plans and rubrics, 2) maintaining an ongoing reading observation checklist for selected students, 3) establishing student portfolios and appropriate tags and 4) providing opportunity for student self-reflection in reading.

This action research spanned the months from late August 1996 through December 1996. During that time the targeted population remained constant.

The action research began with the completion of parent and child MI surveys. A sample is found in Appendix A. The survey included preference statements targeting the various multiple intelligences. These statements related to school and real life experiences.

The researchers designed classroom observation checklists. This was a type of authentic assessment whereby student progress could be recorded. Teacher observation may differ from standardized tests. A sample is found in Appendix F.

Students' portfolios were established the first week of school. Weekly tags were designed to identify why a student selected a piece of work to be placed into the portfolio. Researchers also chose items to be included in the portfolio that revealed increases or decreases in student growth. A sample is found in Appendix C.

A graphic organizer was created to record MI lesson plans on a weekly basis. This format forced the researcher to provide activities covering the MI spectrum. A sample for planning multiple intelligence lessons is found in Appendix D.

The researchers wanted students to reflect on their reading. In an effort to get students to take an active role in reading and analyze their reading comprehension growth, they recorded their feelings periodically with checklists and self assessments. Samples are found in Appendices E and I.

As the action plan progressed, the researchers immediately found it necessary to make several changes. Differing ability levels at all three grade levels made it difficult to use the same measuring devise for every student. Adjustments had to be made to the weekly child reflection sheet to accurately reflect what was going on in each classroom. In classrooms A,B and D the researchers found that their students duplicated the same answers weekly with very little reflection. This process seemed meaningless to them. Students did respond with expanded answers to oral reflections and connections in discussions guided by their instructor. These were then transposed into their journals in written or picture form. Other graphic organizers were created for the younger students in classroom C. They recorded their own interpretation of what was meaningful to them in pictures and phrases from their multiple readings of the text. They also wrote their own comprehension questions which were assessed for observation of higher level thinking. These graphic organizers are found in Appendices G and H.

In order to further increase test scores, the research team addressed the possible causes of low test taking scores and our interventions in these ways:

1) lack of home and school reading practice - use of SSR and DEAR time, partner and choral reading, provide free reading time, 2) high test anxiety - teaching test taking strategies and test exposure, 3) developmental lags - maturation time, and tiered assignments, which is a whole class assignment with different

expectations for the various developmental levels, 4) school inspired home modification training opportunities for growth in lower socioeconomic communities - motivating home involvement and interaction through the use of a Great America reading program, Pizza Hut Book It program, Traveling Tales, monthly book certificates and school sponsored no TV week, 5) poor recall - KWL, graphic organizers, 6) unable to make reading connections to life - reading reflections, journals, transfer to life games, sharing, 7) poor decoding skills - revisit text, decoding games, writing vocabulary definitions, drawing pictures of words, writing sentences with vocabulary words, word puzzles, 8) poor test taking skills - rubrics, teach test taking strategies, exposure to a variety of tests, 9) speaking a second language at home - build prior knowledge through multiple intelligences, KWL, films, songs, stories, personal dictionaries, pairing, peer checking. The teaching team felt that these methods worked well in our targeted classrooms as the increase in test scores from pretest to posttest in the following graph data will prove.

This research from all four classrooms and grade levels took place in a singular school building consisting of kindergarten through fourth grade students. The teachers worked closely together sharing multiple intelligence ideas and plans. They were encouraged to use multiple intelligence theory by the current building principal. He is completing his second school year as this building's principal. The original low test scores occurred during the tenure of a previous principal. Our new principal and the researching team shared the concern over the school's low reading test scores and also shared the dedication to finding out possible solutions to raise them.

Teacher Observations From Classroom A

Multiple intelligences will always be a part of the main structure of this fourth grade classroom. This year, the use of portfolios and journals sparked incredible growth for the student population in teacher A's class.

The portfolio created many experiences for the children. First, it allowed the children to take responsibility for their work and an opportunity to actually track their personal growth. They were required to quarterly view their portfolios and fill out a portfolio review sheet that had them create goals for the following quarter. A sample of this is provided in Appendix R. This allowed them to realize the areas in which they were growing. Reviewing their portfolios changed their awareness of their personal growth, so that work was no longer done and never to be seen or owned again, but kept as a reminder of growth. The children also used their portfolios to explain their process of learning and exposed their multiple intelligence work also, during parent/teacher/student conferences. Teacher A had the children attend conferences to take part in explaining their learning process to their parents. The teacher acted only in the capacity of facilitator and the child and portfolio did the talking. This experience bonded the parent and child and created a better understanding of the year's growth in their multiple intelligence fourth grade experience.

When teacher A began her first attempt using portfolios she kept one very wise piece of advice: start small and enjoy the process. With this in mind, the fledgling steps taken were small but headed in the right direction.

The beginning of the first year of using portfolios, found teacher A sending out parent letters explaining the philosophy and benefits of portfolios in her classroom. An example of this letter is found in Appendix Q. This was followed by the children beginning to collect pieces of their work to include in their portfolios. This routine was established by the children "tagging" a piece of work on Fridays after they sorted through all their week's work. The "tags" represent categories for use in determining how their work is progressing. An example of a tag might say "the work that gave me the most struggle this week" or, "the piece of work I am most proud of." The teacher had already given out sheets of printed tags with phrases describing the type of work for which the children were looking. The children held onto these sheets until the tagging process happened at the end of the week. On the first day of the week the whole class decided which tag would be used by the children at the end of the week, so students could be "on the lookout" for that category of tag, in their work for Friday.

Friday arrived and at the end of the day the children cut out the tag that they all voted on Monday, and sorted through their collected week's work to find the paper that best represented that tag. They stapled the tag to the work and entered this into their portfolios.

This end of week piece was not all that went into the portfolios. Any work a child wanted to put in the portfolio was welcomed. Their choice counted. The teacher also told the children during the week to put certain pieces into their portfolios.

This was done for an entire quarter, inviting the children to visit and organize their portfolios during free time. Then at the end of the quarter the children were given time to organize and own their portfolios so they could then fill out a portfolio review sheet. This journaling sheet encouraged them to write what was wonderful about their work process and what goals they had for the following quarter. This was when the children began to realize that it would be great to put in papers that weren't all A's - because they could look back and see papers they struggled with, and realized that they now knew how to do that skill. This created self actualization in the children and exposed the reality that their personal struggling process created gain.

These portfolios were used all year, every day. They were also used quarterly to visit and reflect on their process. Then at the end of the year, the class had a celebration at Open House with the parents. The children took their parents to a private place in their room and celebrated their process through reviewing their entire portfolio pieces. It was a time to celebrate,reflect and bond with their parents. Everyone went away with a deep feeling of satisfaction. This experience also helped the children to celebrate their process and own it too - own it for a lifetime of learning!

Journaling took on a life of its own in classroom A. The children started out journaling only two sentences and wound up being able to enjoy journaling a page or more per session. Teacher A introduced higher level thinking graphics as models to help mold their thinking process. The graphics created a visual from which the students could learn and follow. Eventually they were able to think in that way and began to journal using the written word without the benefit of the graphic organizer. They began to think, thus write at a higher level. True ownership and retention of the subject matter resulted from making connections and transfers into their personal lives with what they were learning from the curriculum. Whenever they could connect the knowledge with their life experiences, retention of facts occurred. Real learning was actualized.

Teacher Observations from Classroom B

The fourth grade teacher in targeted classroom B began this action research by clearly defining and explaining each of the multiple intelligences. Over a period of seven days this instructor highlighted one intelligence each day, particularly applying it in reading. After students became more familiar with the multiple intelligences and how they worked, various assignments were assigned to incorporate each intelligence every week. If it seemed out of place to incorporate these special tasks into reading, they were sprinkled out into other subjects in the curriculum.

Multiple intelligence assignments in classroom B were generally either center-based or project-oriented. Students moved from center to center four days a week for thirty to forty minutes a day, particularly when the class was studying a novel.

In early October, for example, we read Cricket in Times Square by George Sheldon. Seven multiple intelligence centers were set up around the room that had a menu of many options. Students were required to visit each center at least one time and complete one option during class time. Every week these mini projects were shared with the rest of the class. An example of this is found in Appendices U-Z. As the novel progressed, students asked to revisit those centers that matched their strongest intelligences. Students almost sparkled as they presented the projects that they had created.

During the course of day to day reading instruction, other multiple intelligence assignments were given. After each chapter was completed, a drawing of the main events of that section was assigned to foster the visual spatial intelligence. Each drawing was captioned by a summary of three to five sentences for the verbal/linguistic intelligence. While children read the chapters silently, classical music was played to uplift the musical/ rhythmic intelligence. Once each week teacher B fostered the bodily/kinesthetic intelligence with dramatic skits and dances. Literature circles met daily with pods of five students in cooperative groups who discussed the book using their interpersonal intelligence. Each night the classroom used the intrapersonal intelligence as they journaled their connections. Everyone used the mathematical/logical intelligence as they completed a cultural venn diagram between the Chinese and American culture. Another venn diagram was used when the class compared the book to the movie.

Projects arose from culminating reading activities related to book reports. Some projects that these children especially enjoyed were creating a Christmas wish store with various story problems, cartoons, murals, puppet shows, writing and performing songs, making game boards, choreographing dances, plays, designing roll TVs and building character collages. Students journaled their thoughts on reading in general. They focused in on the books they were reading on a daily basis for five weeks and a weekly basis for the conclusion of the research project. These projects were usually done in cooperative groups.

Classroom reading discussions occurred on a daily basis. During these discussions the teacher encouraged students to connect what they were reading about to other areas of the school curriculum, either in their writing journals or orally in discussion. This was very difficult at first. Connections were minimal and most basic. At the second class discussion, teacher B can vividly recall the gifted students complaining about how hard it was to interrelate their reading with other things they were learning. As the weeks progressed, connections began to be made more easily both in conversation and in writing. Soon students began to make more meaningful connections, not only to school, but also to their life. It was at this point that teacher B knew both higher level thinking and transfer was occurring.

Multiple intelligence projects were produced by groups at some points, but most often done by the individual. Each project was developed from a rubric framework that was also used as an authentic assessment tool. This teacher felt that these project rubrics raised the general level of expectations to a somewhat higher level. It also clarified all project details for each and every student. It stimulated motivation, creativity and created a real spirit of classroom community.

Teacher Observations From Classroom C

The second grade teacher in Classroom C started slowly with very basic multiple intelligence centers, because she needed to activate some background knowledge before she could begin her use of multiple intelligence activities for content reading. Many students were prereaders at the beginning of the year, and a sight word vocabulary and awareness of phonics needed to be developed. Teacher C coined the phrase "phonics phinders" for students who located the strategic phonics skills (such as short and long vowel sounds, schwa and silent e) that were presented in the basal text skill charts, in any other reading experience. In cooperative groups (interpersonal), these were written with vis-a-vis markers on posterboard charts (visual/spatial) graphic organizers. They were put on display as phonic reminders, for class reference and to create personal pride in exhibiting recall practice work.

Another beginning year cooperative group activity was a sight word game used for concentration or go fish. Each different rotational center game consisted of eight pairs of sight words on color coded cards. Each game promoted group ownership by forcing the group members to teach each other the basic sight words in the packet. Only then could the whole group advance together to a different set of game cards by being checked off on a chart. This whole class chart consisted of a numbered list of all of the sets of basic sight words, so the teacher could keep track of exactly which ones were mastered and how many games any particular base group of children had finished. The class also played "popcorn bingo" with sight words.

Lots of hands on bodily/kinesthetic group activities, and sharing learning experiences in verbal/linguistic circle time were employed to activate new prior knowledge. Often times, to activate prior knowledge, we would gather in circle time to share using the K-W-L graphic organizer before beginning to read a new story. In the "K" category we would use The Zoo Book, and Your Big Backyard magazines as non-fiction sources for prior knowledge before sharing our findings. Another very useful tool for increasing the joy of sharing was the karaoke machine. When cooperative groups would create their own play as a dramatic story recall experience, the children found that the classroom could hear the dialogue easier by having the actors use the two microphones from the karaoke. Teacher C was all delighted with this discovery, shared it at a staff meeting, and the PTA generously donated a machine for the use of the whole school.

In the place of Intrapersonal journaling for self reflection and weekly self measurement in reading, classroom C began the year simply sharing aloud metacognative thoughts during circle time. The class progressed to journaling with pictures, and finally logged weekend news happenings to show their portfolio growth. The weekend newspapers were written every Monday. These were on 9 x 13 sheets of light green newsprint with 1/2 lines and 1/2 open space for a picture. Students were asked to remember any events from their lives that had happened over the weekend which they thought were meaningful and would want to share with the class. By using this technique, children learned that their lives became important to others only when they took the time to share their personal events with others. Other people were not mind readers and would never realize the essence and beauty within each child unless that child chose to take a risk and expose his personal uniqueness. This kind of journaling let the children remember life events, self-actualize their own accomplishments in metacognition, share that with others and receive appreciation by some kind of classroom applause. This let each child know he was cared about. If someone else thought he was worthwhile to listen to, then his life was important and he did have self-worth. Thus, this simple activity increased each child's self-esteem.

One of the most beneficial methods of reflection was a sheet consisting of 1/2 picture and 1/2 space for writing with the beginning phrase, " This is what I learned about ____." The children experienced the freedom of writing whatever they had felt was important about the text. They wrote or drew without the boundaries of trying to please the teacher's expectations. As well as for reading, we used this sentence starter phrase for any content area. It was particularly helpful after a science unit, social studies unit or a major reading project. An example is found in Appendix I.

When basic reading sight words were mastered, the class exhibited wonderful progress by being challenged to think of their own comprehension questions from the content of each basal story. These questions were written on forms with rubrics which asked: for the story title to be underlined, author, neat handwriting, proper punctuation for the question and answer and increased credit for higher level thinking. Before being turned in, these were edited by a peer. They were then used as advancement tools in a cooperative group baseball boardgame that used actual bubblegum baseball cards as tokens and had a scoreboard. These questions exposed the message the child felt was important from reading the story and what he would remember as the most important message. Thus, they explained the actual personal level of each child's comprehension of the text. Examples are found in Appendices G and H.

For fourteen weeks, a multiple intelligence lesson plan was created with seven intelligences covered. These lessons fit the basal or particular novel required in the curriculum. Classroom C followed up the teaching of the story with the use of executing four centers for multiple intelligence activities. Each center operated from a laminated card, containing cooperative group roles, directions for the center and a rubric from which to grade the group's progress. After each group would complete a center, a sharing and videotaping session would occur. If the classroom interest was high for a particular center, it would be rotated during the week. The original center time took an hour and operated approximately one day a week. During the rest of the week, time was allowed to perform the other multiple intelligences which weren't taught in the centers. For example, the students read The Great Kapok Tree by Lynne Cherry. The whole class created a bulletin board consisting of chalk rendered animals from the story and the analysis of the elements in the rainforest biome to relate it to a science unit. The multiple intelligence centers consisted of: 1) mathematical/logical - making a board game entitled, "Cut Down the Tree - Yes or No?", 2) visual/spatial - a five foot flip book poster of windows with an animal picture cause/event on top, and an effect problem solving sentence underneath, 3) musical/rhythmic - songwriters wrote and recorded their song to the tune of "BINGO" on a karaoke machine, and 4) bodily/kinesthetic - actors wrote a play depicting the story, and performed it with the karaoke microphones for listening and acting pleasure. There wasn't enough time or need to rotate exact centers for this book, but the ideas in the centers were later used for other novels and each group had a chance to participate in each kind of center with a different story.

Graphic organizers were widely used as logical/mathematical and visual refinement tools for thought focus. Favorite ones that classroom C employed most often were: the 5 W's flip book, the spectrum, the target, story maps, fishbone and web. One of the graphic organizer techniques that was found as most helpful for younger students was the use of center cards which described the directions, cooperative group roles and a rubric for evaluation. These were laminated and graded with a vis-a-vis marker, and xeroxed for inclusion in portfolios.

Reading comprehension was also developed from a simple no-fail game board idea. Cooperative groups would write ten story events in complete sentences. The facilitating teacher would check them to make sure the group had put the plot in sequential order. After peer editing, the instructor would also edit these sentences for capitals, periods, grammar, neatness, higher order thinking, and - simply, did each sentence make sense, or tell enough. These sentences would each be numbered in sequential order, be glued to a posterboard and one corresponding illustration would be added to accompany each sentence. Sidewalk step squares would show the path on which the game. Tokens would progress. Advancement would happen on a throw of the die when the player correctly answered a child written game card. These were written by the group members. Each card consisted of a lower level question that could only be answered by a yes or no answer. This way the children demonstrated detailed knowledge of their comprehension about the story from which the game was based. An example of the story question graphic organizer is found in Appendix J.

We named our classroom the "Rainbow Connection." We made a multiple intelligence rainbow in the hall by using seven colors of traced handprints - one color for each of the multiple intelligences. We used a seven color coded chart (one for each intelligence) to remember all the reading activities we had done in each intelligence for that time period. We learned the poem " It takes seven colors, to make a rainbow whole, and seven multiple intelligences, to help a child grow." By incorporating the water cycle and the science unit of plant growth, they were finally understanding the idea of matching their individual talents, learning styles and learning strengths to the multiple intelligences. They were learning to watch for multiple intelligences in themselves and in others.

We then progressed to rendering larger projects with the idea of teaching students that the real purpose of developing reading comprehension is to transfer it to life by reading for comprehension in all subject areas. We compared four novels which had grandfather themes, incorporated science with reading The Hill of Fire by Thomas P. Lewis, in a dinosaur/volcano unit. We also discovered that social studies content could link with reading to apply technical prior knowledge of Native American life to the novel The True Story of Pocahontas by L. Penner. These lengthy projects were each graded by detailed rubrics and incorporated in their portfolio. An example of the grandfather theme multiple intelligence centers is found in Appendix O.

The use of portfolios in classroom C was different than the other classes due to the younger student's developmental level. Our portfolios were not tagged until the end of the year because then self-progress was more recognizable by the children. By then the students had spent the year learning grade level expectations about quality (not quick) work, punctuation, higher level thinking skills and acceptable handwriting.

The use of rubrics in classroom C greatly enhanced the kind of authentic assessment that lends itself to multiple intelligence center activities. When rubrics are spelled out in detail or created with student input before a project, the children will perform the task more accurately. Examples of these rubrics are found in Appendices G,H,J,K,L,N and P.

The teacher of classroom C found that the application of the multiple intelligence theory in her classroom made this the most exhilarating year of her teaching experience. Teaching had a new spark, zip and was fun again. Planning the fourteen lessons was creatively challenging and became a learning experience not only enjoyed by the students, but also by the facilitating teacher in her constructivist classroom. As she kidwatched, she marveled at the detailed activities which the cooperative groups could execute by themselves. Her "Rainbow Connection" family of children were developing into a class of leaders, risk takers and peacemakers. The increased noise level, a little disorganized clutter and the unexpectability of length of time required for projects didn't deflate the learning process, but added pure fun. She knew the extra prior planning time spent on detailed directions and rubrics explaining expectations, was well worth her observations of the children's joy in self-discovered knowledge which was flooding her classroom.

Teacher Observations from Classroom D

In classroom D the teacher used an organization method she called Explorations. Explorations included a 30-40 minute session per day. It was set up as four areas of study to provide multiple intelligence hands on activities to reinforce the curriculum being taught that week. An example follows: pods of five students worked on each exploration on this Earth Day project: 1) interpersonal, verbal/linguistic - write a persuasive letter to the city council convincing them to save a wildlife area from development, 2) mathematical/logical - create a circle graph to show the type of garbage being thrown away in DuPage County, 3) visual/spatial - make an Earth Day book - involve writing sentences for each of the letters in the word ECOLOGY and illustrating them in a booklet form. They later read these books to the kindergarten. 4) visual/spatial - Earth Day Hanging-trace a circle in blue, cut out the continents in green, glue on to the earth, make a small ecology sign to hang above it, 5) bodily/ kinesthetic - work in groups to act out an Earth Day play, 6) musical/rhythmic - Learn the words to "Heal the World."

Throughout Earth Week the class read many stories about ecology such as Wump World by Bill Pete, Just a Dream by Chris Van Allsburg and The Giving Tree by Shel Silverstein.

To culminate two weeks of work, the students reflected upon their part in the conservation of the earth. They were asked to tell what they should do today and in the future. Through the use of the multiple intelligences, all students learned about Earth Day. When they were asked to read, they had the prior knowledge and experience to make the necessary connections and transfers.

Teaching to the multiple intelligences had an important impact on the students with learning disabilities in classroom D. Many students with learning disabilities have great difficulty learning in the verbal-linguistic intelligence. The printed word becomes an obstacle to learning. By using intelligences in which they have strengths such as: visual/spatial, musical/rhythmic, mathematical/logical, or interpersonal, these students are able to be successful. A particular student in this classroom had a learning disability with processing words orally or written. He was, however, quite gifted in the mathematical/logical and the musical/rhythmic intelligences. This student had no trouble learning vocabulary, if it was in a song, or connected to a mnemonic. Graphic organizers helped him to organize his reading and writing, so that he could make sense of the material. This student's reading level increased from first grade reading to a beginning third grade level. He felt happy and successful in the classroom.

Despite the inherent age and maturation differences in each of the four classrooms, the researchers agreed upon a common teaching philosophy and utilized similar techniques concerning the implementation of the multiple intelligences. Initially, they defined and taught the various intelligences in isolation. Students were affirmed when they exhibited a particular multiple intelligence trait. The researchers spent many hours working through the formative weeks of multiple intelligence lesson plans. Every classroom experienced the joy of learning through hands-on centers. Each instructor discovered that their students were making connections to their lives from the learning which was taking place in their classroom's multiple intelligence centers. The researchers were encouraged and delighted at the emergence of higher level thinking which was taking place in their classrooms. Students also began actually realizing the meaning of their own higher level thinking. Journaling created a natural progression for transfer. Portfolios were the vehicle to celebrate this process.

Presentation and Analysis of Results

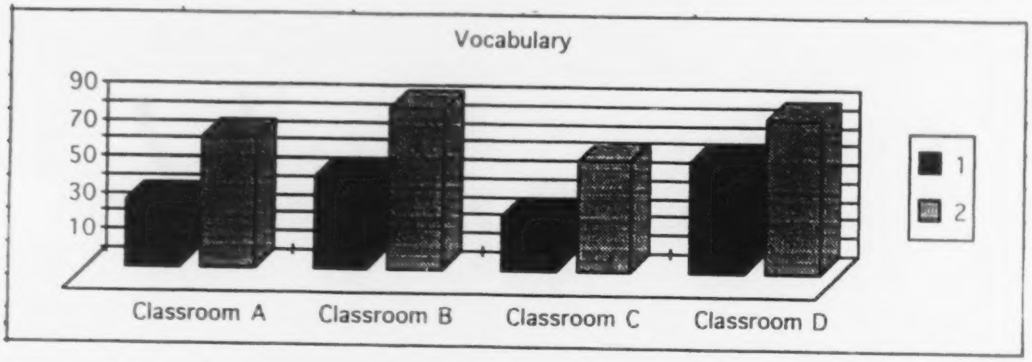
When looking at the data from all categories of assessment, the highest percentage of growth was in a different skill in each of the classrooms representing different grade levels. Each of the following tables includes a description of the spectrum of itemized reading skills that were measured by the standardized tests at the various grade levels.

Table 1

Standardized Results in Vocabulary -

Comparison of all Four Classrooms

JANUARY 1997



These graphs depict the growth in vocabulary by all four classrooms. The standardized test was consistent in measuring vocabulary at all three grade levels. Students needed to use context clues to determine and decode the correct word in a given sentence. The specific skills that were measured in the Vocabulary section of the standardized test were:

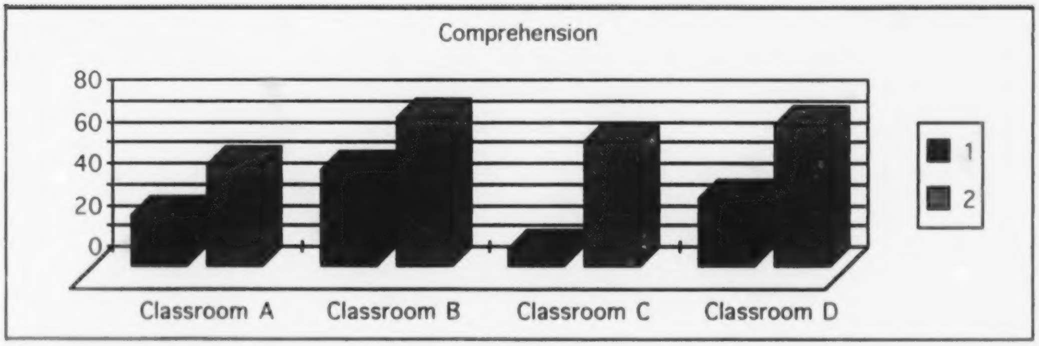
classification (grades 2,4), homophones (grades 2,3,4), tested vocabulary (grades 2,3,4), multiple meaning (grades 3,4), analogy (grade 4), and synonym/antonym (grade 4).

Table 2

Standardized Results In Comprehension -

Comparison Of All Four Classrooms

JANUARY 1997



The standardized test in the area of comprehension is measured in slightly different ways at various grade levels. The skills that were measured in the comprehension section of the standardized test were: word referents (grades 2,3,4), main idea/details (grades 2,3,4), comparison (grades 2,3,4), inference (grades 2,3,4), predicting outcomes (grade 4), cause/effect (grade 4), fact opinion (grade 4), drawing conclusions (grade 4) and sequence (grade 4). As students progressed through grade level curriculum, the complexity of the comprehension skills increased.

Table 3

Standardized Results in Literature -

Comparison Of All Four Classrooms

JANUARY 1997

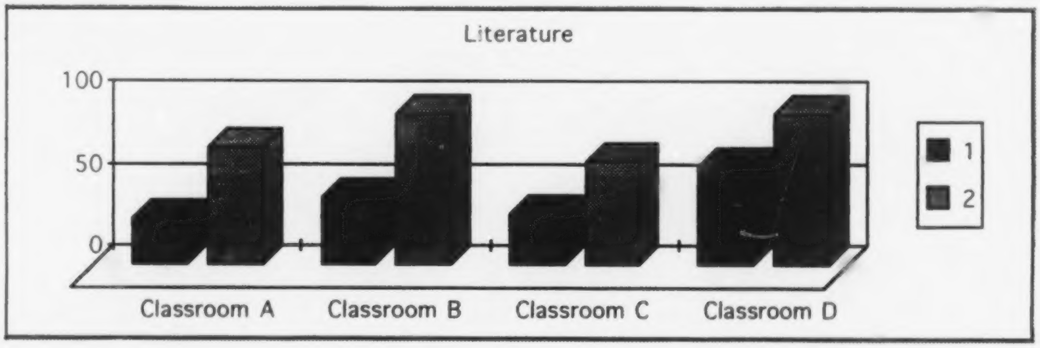


Table 3 shows all student scores improved more than 30%. The skills that were measured in the literature section of the standardized test were: reality/fantasy (grade 2), story elements (grades 3,4), characterization (grades 3,4) and figurative language (grades 3,4). The difficulty of each skill in the standardized test increased as the grade level increased.

Table 4

Standardized Results in Decoding

Comparison Of All Four Classrooms

JANUARY 1997

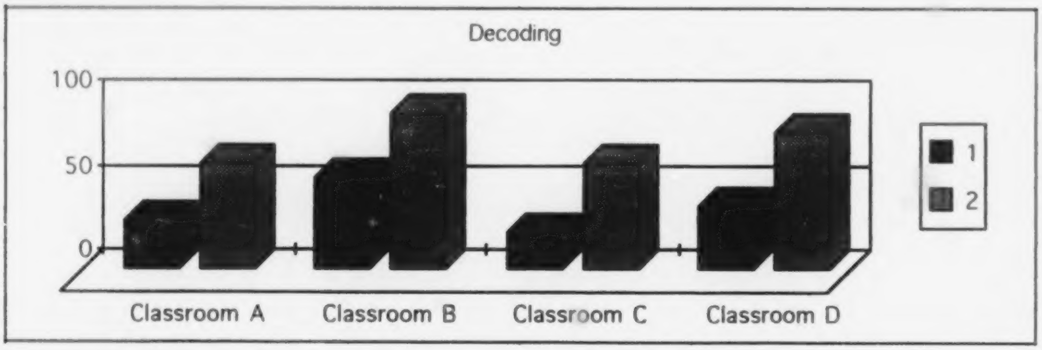


Table 4 shows increased growth at all grade levels. The most dramatic growth was at second grade. The pretest scores were very low indicating that many students entered second grade as prereaders and left as emergent readers. The skills that were measured in the decoding section of the standardized test in second grade were: consonants (g,dge), consonant clusters (scr, spr, str), R-controlled vowels (ar,or), schwa, vowel digraphs (oo,ea), long vowel (igh), spelling changes (double final consonant), consonant digraph (wh), long vowels (o,i), vowel digraphs (oe,ie), L-controlled vowels (al) and vowel digraphs (oo,ue). The decoding skills measured in both of the other grade levels were: context clues, prefixes/suffixes and long-word decoding.

Table 5

Standardized Results In Study Skills

Comparison Of All Four Classrooms

JANUARY 1997

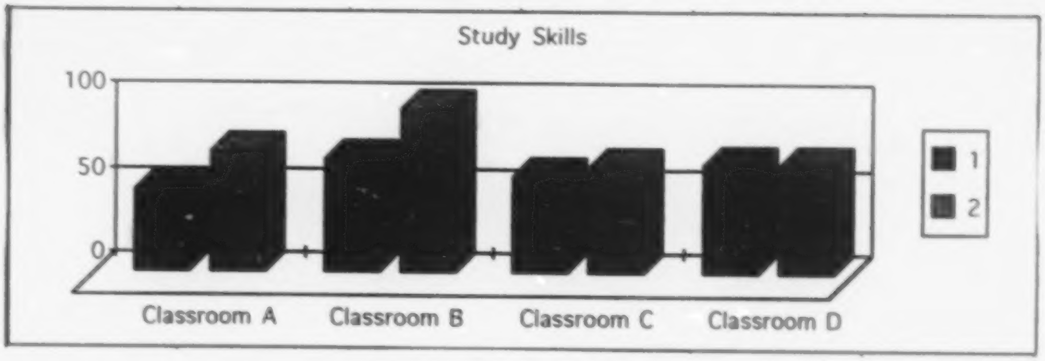


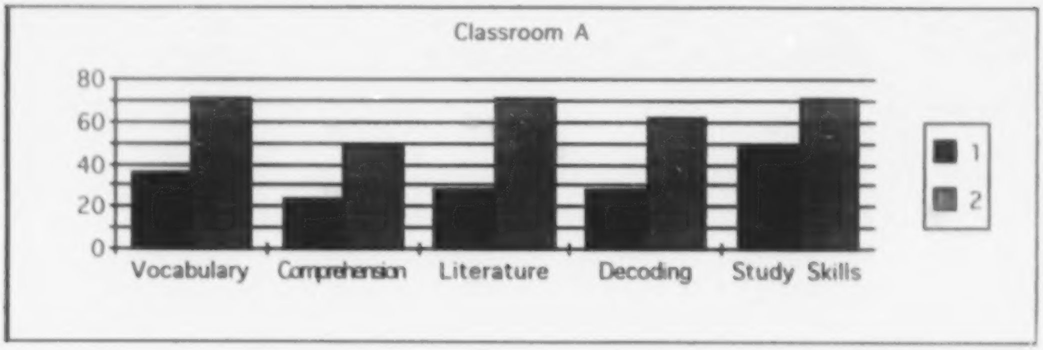
Table 5 reflected increases in study skills at all grade levels. However, grades three and four experienced over 20% increased growth. The skills that were measured in the study skills section of the standardized test were: alphabetical order (grade 2), book parts (grade 3), symbols and signs (grade 3), charts (grade 4), dictionary (grade 4) and encyclopedia (grade 4).

In order to measure the effects of the reading interventions, the results of the posttests in each classroom were examined. The following tables show how students performed on the posttests in the categories of vocabulary, comprehension, literature, decoding/word study and study skills. Student population in all four classrooms remained constant during the time of implementation. Each table is followed by an interpretation and analysis of this information.

Table 6 A

Pre and Post Reading Tests Comparison

CLASSROOM A JANUARY 1997



This table indicates that students in class A showed marked improvement in their reading scores in each of the five targeted areas. When compared to the September pretest the increases were as follows:

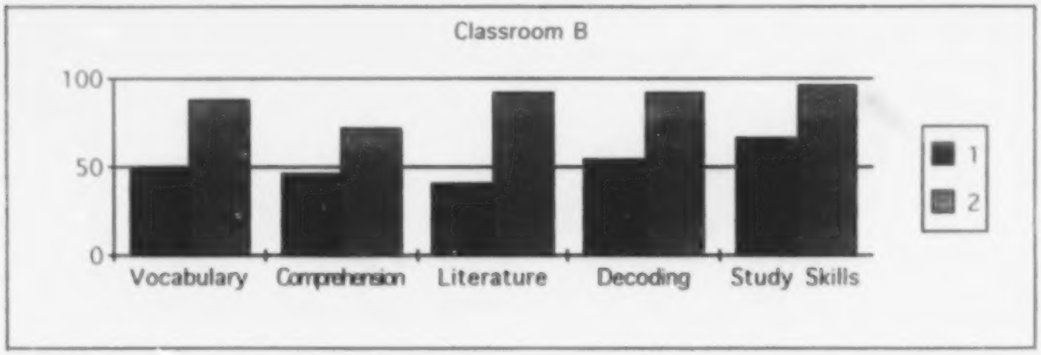
1) Vocabulary showed an increase of 35%
2) Comprehension showed an increase of 21%
3) Literature showed an increase of 33%
4) Decoding showed an increase of 34%
5) Study skills showed an increase of 23%

Teacher A believes that another variable that could have influenced the higher test scores is the use of intensive daily journaling. The teacher saw a correlation between the increased level of understanding of the printed word and the understanding of the rest of the curriculum.

Table 6 B

Pre and Post Reading Tests Comparison

CLASSROOM B JANUARY 1997



This table indicates that students in class B also showed marked improvement in their reading scores in each of the five targeted areas. When compared to September's pretest the increases were as follows:

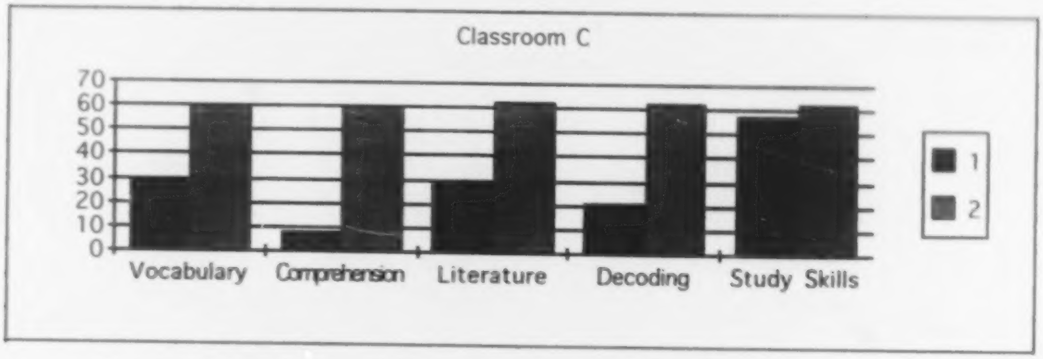
1) Vocabulary showed an increase of 33%
2) Comprehension showed an increase of 25%
3) Literature showed an increase of 51%
4) Decoding showed an increase of 38%
5) Study skills showed an increase of 30%

Beyond our multiple intelligence interventions, the following reasons may have a bearing on the increased test scores. The increases in vocabulary and comprehension most likely occurred because this classroom continually dialogued or journaled about what they were reading. The classroom spent a substantial amount of time reading independently every day. Increases may have also resulted simply because of student maturation and the presence of a gifted cluster in this classroom. Continually revisiting the text for comprehension and specifically teaching a variety of test taking strategies, certainly may have contributed to this growth. Literature gains may have resulted because students were required to read different genres of books every month that included a verbal, written, and artistic strand.

Table 6 C

Pre and Post Reading Tests Comparison

CLASSROOM C JANUARY 1997



This table indicates that students in class C also showed marked improvement in their reading scores in each of the five targeted areas. When compared to September's pretest the increases were as follows:

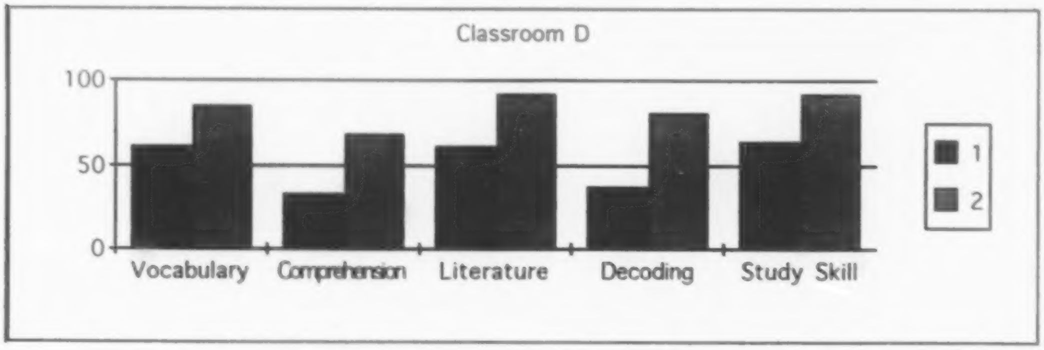
1) Vocabulary showed an increase of 30%
2) Comprehension showed an increase of 52%
3) Literature showed an increase of 32%
4) Decoding showed an increase of 41%
5) Study skills showed an increase of 5%

The teacher of classroom C believed scores increased in vocabulary and decoding because basic sight word games were used to introduce and practice phonic skills. Students also were reinforced by going back to the text to locate specific phonic items. The increase in comprehension and literature scores were due to the use of the students learning to write their own questions and answers and use them in a classroom game situation. Students learned to recognize high and low level questions. Other factors included the use of the fishbone graphic organizer, the story map and use of sequencing story events. The increase in the study skills section was caused by the extensive time spent differentiating between fact and fiction in the fantasy unit consisting of fables, folk tales, fairy tales and tall tales.

Table 6 D

Pre and Post Reading Tests Comparison

CLASSROOM D JANUARY 1997



This table indicates that students in Classroom D also showed marked improvement in their reading scores in each of the five targeted areas. When compared to September's pretest the increases were as follows:

1) Vocabulary showed an increase of 24%
2) Comprehension showed an increase of 36%
3) Literature showed an increase of 32%
4) Decoding showed an increase of 56%
5) Study skills showed an increase of 32%

Teaching to the multiple intelligences improved reading scores by building on prior knowledge. Median test scores for classroom D went from 75% to 90%. This classroom also contained a gifted cluster.

It was exciting to see that all four classrooms experienced similar growth from the pretest to the posttest. The researchers felt that teaching to the multiple intelligences could have been a major factor as shown by the comparison graphs of the pre and post standardized tests.

This teaching team has tried within their thesis to give back to their readers what they received within their Field Based Masters Program. The teachers have experienced learning from a child's perspective again. As masters students they have grasped the value of learning things that would transfer to life, instead of dry theory to be regurgitated on tests. They used that re-awakened knowledge by teaching as facilitators in constructivist classrooms. This practical application included the use of multiple intelligences, self discovery in centers, problem solving, cooperative learning and the sharing of genuine metacognitive reflection.

Conclusions and Recommendations

Based on the presentation and analysis of the data on improving reading through the use of multiple intelligences, the targeted students showed a significant increase in reading comprehension. This increase was proven when comparing the pretest and posttest results. Beyond the testing experience, the implementation of multiple intelligence theory enhanced achievement in other curriculum content and stimulated growth in many other areas such as: 1) self-awareness, 2) higher level thinking, 3) motivation, 4) student behavior and 5) interpersonal relationships.

Recognizing the various intelligences of each student created a higher level of self-awareness for each individual. By teaching and modeling the multiple intelligences, students could recognize their strengths and those of others. The portfolio allowed students to select pieces of their work and gave them the opportunity to view and share their learning process.

Self-awareness was also promoted through the process of journaling. Readers were taught to respond in their logs with connections and transfers to their personal lives. This gave students ownership into all aspects of their reading.

The researchers found that the multiple intelligence intervention fostered higher level thinking. One way this was accomplished was through the use of graphic organizers. These structured the direction of student thinking by interconnecting several of the intelligences. For example, the fishbone organizer uses the mathematical/logical, visual/spatial, verbal/linguistic and intrapersonal intelligences to organize the thinking process and actualize learning.

In the three story intellect model (Bellanca, and Fogarty, 1991) inventiveness is considered an element of higher level thinking because it is on the top story. The researchers found their children willing to take risks to invent unique projects. Therefore, increased motivation was a high point product of this action research project.

A significant portion of the multiple intelligence intervention occurred in cooperative group settings. As a result of this structure, interpersonal social skills were constantly taught, modeled and utilized within each classroom. Student behavior was generally on task because learners had a wide variety of appropriate behavior choices from which to choose to problem solve. This brought about group, as well as individual success and the classroom bonded together. Depending on what intelligence was being used, every child had the opportunity to be an emergent leader.

The researchers found that the multiple intelligences intervention created very successful results, so much so, that each teacher has decided to continue using multiple intelligence theory and application in the future. By facilitating with multiple intelligences the teachers felt less stress and the classroom atmosphere was fun and exciting. The intrigue of this strategy drew students into willfully choosing to pay attention to the curriculum being taught, thus being able to make high and low connections and transfers to their personal lives. As each student reviewed their personal portfolio, the child marveled at observing saved pieces of work that represented a year's growth process. This concretely showed evidence of struggle and mastery over a curriculum which had been tagged as difficult in the beginning of the year and was now conquered by the end of the year.

The results of applying the multiple intelligence theory were so significant that all four researchers have chosen to enhance their ideas in the future in their classrooms. They will expand the use of journaling to all content subjects. Journaling methods may become more effective by writing predictions and summaries. When the tagging process has been successfully modeled, the children will be encouraged to create their own tags for particular portfolio pieces. Everyone also believed that independent reading time should be increased.

In examining how different children learn through the multiple intelligences, the researchers found some reading patterns emerge. They have found ways to address these needs and patterns to modify their teaching for success in the future. Our school ranked readers in the categories of: 1) gifted, 2) the wide middle range (consisting of high, high average, average, low average), 3) low and 4) ESL. This was the method the principal used in dividing students into classrooms for the next school year. There are usually some students in each category in each room, but sometimes a teacher will get a ranked cluster, as the researchers did this year. When we reflected upon these levels and their response to multiple intelligences, we seemed to agree that the students who thrived the most strongly with multiple intelligence centers and explorations were in the wide middle range. There was a need to supplement teaching in other ways, or modify expectations for students in the other categories, so they could learn in a more balanced way to meet their needs. The gifted children often found frustration with continually working in cooperative group centers, and needed to find time to work on personal, more involved projects with greater depth for their individual interests, to feel fulfilled and less stressed from constantly having to wait for others to catch up. The low students appeared to love learning from multiple intelligences because of the success they found by learning in other ways than in just mathematical/logical and verbal linguistic, but they also needed supplemental teaching. They seemed to need lots of structure, simple exact directions, extra time to complete work, and periods of piece and quiet. The use of music appeared to be soothing and helpful, and set the mood of relaxation, to help them finish products.

In the lower grade, the teacher will spend more time in the future giving special attention to that small low group on reviewing basic phonics, word decoding, and simply giving that group more time to read, read, read with simple books for high success. The ESL cluster, because of the language barrier, appears to need lots of activation of experiences in other ways besides reading in verbal linguistic fashion, to form prior knowledge before they can go on with projects and tasks. This can be done with group sharing, movies, pictures, art work, peer help and the teacher spending extra time with their group just answering their questions. The researchers feel that these supplements will help fill in the learning gap for differing levels of their classroom reading population.

In the future, these are some ways we will increase the use of the multiple intelligences in our classrooms: 1) musical/rhythmical - experience more classical music (especially Mozart in D minor), and write more commercial jingles, 2) verbal/linguistic - use rubrics for specific types of writing, and increase class discussions and sharing circles, 3) bodily/kinesthetic - incorporate more centers, get kids up and moving and increase the use of simple dramatic impromptu skits, 4) mathematical/logical - increase the use of graphic organizers, allow more time for student created story problems relating to extended curriculum, 5) visual/spatial - have students write math tests on review posters and create “people searches” (Bellanca, and Fogarty, 1991) as study guides for test review, 6) interpersonal - continue and expand the use of the cooperative grouping experience,

7) intrapersonal - expand on journaling for prediction and outcome, and continue to use portfolios.

The researchers also felt that it was not necessary to use all intelligences in every story. Sometimes different literary pieces lend themselves to only a few particular intelligences.

In the implementation of multiple intelligences in your classroom, remember to start small and work up from there. The pleasure of being a facilitator in a multiple intelligence classroom is in kidwatching; to see how kids respond to the needs of other classmates, and to watch their intelligences blossom! Be sure to point them out when they do! This praise will encourage each child to develop leadership in that intelligence, increase his or her self-esteem and be a part of the growth process.

Don't expect the cooperative learning multiple intelligence classroom to be a quiet traditional workplace. It will be a focused verbal experience of interaction, exploring, understanding, creating, and questioning. The use of multiple intelligences will make teaching exciting, give variety to your teaching repertoire, and just may solve some of your challenges.

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Parent Opinion Survey

Name______________________________________

Read the sentence. If it describes your child please check the line in front of the sentence. Do this quickly, marking your first reaction without analyzing the statements. Please don't discuss it with your child.

I.

_____Books are very important to me.
_____I can hear words in my head before I read, speak, or write them down.
_____I get more out of listening to the radio or a spoken word cassette than I do from television or films.
_____I show an aptitude for word games like Scrabble, Anagrams, or Password.
_____I enjoy entertaining myself for others with tongue twisters, nonsense rhymes, or puns.
_____English, social studies, and history were easier for me in school than math and science.
_____My conversation includes frequent references to things that I've read or heard.
_____I've written something recently that I was particularly proud of or that earned me recognition from others.

II.

_____ I can easily compute numbers in my head.
_____Math and / or science were among my favorite subjects in school.
_____I enjoy playing games or solving brainteasers that require logical thinking.
_____My mind searches for patterns, regularities, or logical sequences in things.
_____I'm interested in new developments in science.
_____I feel more comfortable when something has been measured, categorized, analyzed, or quantified in some way.

III.

_____I often see clear visual images when I close my eyes.
_____I am sensitive to color.
_____I frequently use a camera or camcorder to record what I see around me.
_____I enjoy doing jigsaw puzzles, mazes, and other visual puzzles.
_____I like to draw or doodle.
_____I can comfortably imagine how something might appear if it were looked down upon from directly above in a bird's- eye view.
_____I prefer looking at reading material that has many pictures.

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IV

______I engage in at least one sport or physical activity on a regular basis.
______I find it difficult to sit still for long periods of time.
______I like working with my hands at concrete activities such as sewing, weaving, carving, carpentry, or model- building.
______My best ideas often come to me when I am out for a long walk or a jog, or when I am engaged in some other kind of physical activity.
______I often like to spend my free time outdoors.
______I need to touch things in order to learn more about them.
______I would describe myself as well coordinated.
______I need to practice a new skill rather than simply reading about it or seeing a video that describes it.

V

______I have a pleasant singing voice.
______I can tell when a musical note is off-key.
______I frequently listen to music on radio, records, cassettes, or compact discs.
______I play a musical instrument.
______My life would be dull if there were no music in it.
______I sometimes catch myself walking down the street with a television jingle or other tune running through my mind.
______I can easily repeat the beat to a piece of music.
______I know the tunes to many different songs or musical pieces.
______I often make tapping sounds or sing little melodies while working, studying, or learning something new.

VI.

______I am the sort of person that people come to for advice.
______I prefer group sports like kickball, soccer, or softball to such sports as swimming and jogging.
______When I have a problem, I am more likely to seek out another person for help than attempt to work it out on my own.
______I have at least three close friends.
______I prefer playing games with other friends rather than playing games by myself.
______I enjoy the challenge of teaching another person, or groups of people, what I know how to do.
______I consider myself a leader (or others have called me that).
______I feel comfortable in the midst of a crowd.
______I like to get involved in social activities connected with my school, church, or community.

VII.

_____I regularly spend time alone thinking about things that are important to me.

_____I have opinions that set me apart from the crowd.

_____I have a special hobby or interest that I keep pretty much to myself.

_____I have some important goals for my life that I think about on a regular basis.

_____I have a realistic view of my strengths and weaknesses.

_____I would prefer to spend a weekend alone in a cabin in the woods rather than a fancy resort with lots of people around.

_____I keep a personal diary.

Appendix B

Dear Parent / Guardian,

I am participating in a field-based master's program through St. Xavier University this school year. My basic goal is to improve your child's reading achievement by tapping into his / her many unique learning styles. Your child will experience the regular curriculum through the multiple intelligence approach. I will explain this approach in greater detail at curriculum night on Wednesday, Sept. 10, 1996.

During the next four months one of the ways we will be collecting data is through the use of a student portfolio system. This data will be written up in a normal action research paper. Students identities will be withheld. If you do not wish your child's scores to be included in this project, please contact me. Participation or lack of participation will not adversely affect their report card grade.

Thank you for your cooperation in this process. Feel free to call me with any questions you may have.

Sincerely,

_____ I DO

_____ I Do NOT

give my permission for my child's test scores to be ANONYMOUSLY used in an action research project.

Parent Name: ________________________________

Student Name: ________________________________

Appendix C

Portfolio Tags

1 This was my best piece of work all week.

2. This was something that was frustrating for me to do.

3. This was something I worked hard on that made me feel proud.

4 This was my favorite assignment.

5. This was a piece of work that I needed a lot of help with.

6. This is a piece of work that I did entirely by myself.

7. I made a connection between something I learned in school and my life.

8. This is something I could not do on my own and needed help with.

9. This is an assignment that shows something I learned.

10. This assignment shows shows of my strongest intelligences.

11. This assignment shows an intelligence that I'm working on improving.

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Appendix D
Teacher Lesson Plan for the 7 Multiple Intelligences

Teacher Name____

Subject ____

Objective____

Multiple Intelligence Activities

Verbal / Linguistic

Visual / Spatial

Mathematical / Logical

Rhythmic / Musical

Bodily / Kinesthetic

Interpersonal

Intrapersonal

Appendix E

Weekly Child Self-Assessment In Reading

Teacher____

Name____

1. These are some things I do well in reading.

____

____

____

____

2. I would like some help with . . . or time to work on . . .

____

____

____

____

3. This is what I plan to work on next week.

____

____

____

____

4. Some connections I made this week to my real life were . . .

____

____

____

Appendix F

Reading Checklist

Authors: Paula Albero
Ann Brown
Susan Eliason
Jeanne Wind

Site: Elmhurst, York H.S.

Reading Checklist

1. Has a positive concept of self as a reader.
2. Exhibits prereading behaviors.
3. Is able to predict a story line as a means of comprehension and evaluation.
4. Reads fluidly and with expression.
5. Chooses to read for a variety of purposes.
6. Records reading experiences accurately / reflectively in reading logs.
7. Actively participates in reading discussion groups as a means of sharing reading experiences.
8. Is able to effectively retell a previously read piece, including major story elements; setting, characters, plot, detailed events, and theme.
9. Uses all the reading time to engage in purposeful interaction with print.
10. Summarizes information from fiction & non-fiction.
11. Uses a wide variety of strategies to figure out important unknown words.

Appendix G

Name ______________________________#____**date**______
Story Title____
Author____
Question: ____
____
____
____
Answer:____
____
____

Story Question Rubric

1)	**Higher Level Thinking**	1	2	3	4	5
2)	**Makes sense**	1	2	3	4	5
3)	**Nice handwriting**	1	2	3	4	5
4)	**Capitals and periods**	1	2	3	4	5
5)	**Proper form**	1	2	3	4	5

(name, number,title of story,author,and question)

Total Points ____

Name ______________________________#____**date**______
Story Title____
Author____
Question: ____
____
____
____
Answer:____
____
____

Story Question Rubric

1)	**Higher Level Thinking**	1	2	3	4	5
2)	**Makes sense**	1	2	3	4	5
3)	**Nice handwriting**	1	2	3	4	5
4)	**Capitals and periods**	1	2	3	4	5
5)	**Proper form**	1	2	3	4	5

(name, number,title of story,author,and question)

Total Points ____

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Appendix H

Name ________________________________#____date______
Story Title____
Chapter/Author_______________________________________

1. Comprehension of Text

A. Make up a question from this book important to the story.
Question:____
____
____
____

B. Answer from book_______________page #___________
____
____
____

2. Higher level question - go beyond the story

A. Question____
____
____
____

B. Answer____
____
____
____

3. This is how it connects to school and / or life
____
____
____
____

Story Question Rubric

1)	Higher Level Thinking	1	2	3	4
2)	Makes sense	1	2	3	4
3)	Nice handwriting	1	2	3	4
4)	Capitals and Periods	1	2	3	4
5)	Proper form	1	2	3	4
6)	Shows Comprehension	1	2	3	4
7)	Connections Made	1	2	3	4

Total Points ____

____
Evaluator's Initials

Appendix I

Name____________________________ **#**________

This is my picture and what I learned about

Appendix J

Story: The Great Kapok Tree by Lynne Cherry

Logical /Mathematical
Interpersonal
Intrapersonal
Visual/ Spatial

"Cut down the tree? - Yes or No -"

Jobs -

Material's Manager - Passes out and cleans up supplies.
Encourager - compliments others.
Checker - makes sure everyone is taking turns.
Worrier-makes sure everyone is playing fair.
Recorder- writes the rubric after everyone agrees on it.

Directions- First make the game.

1. Put the proper heading (name of story, and author, and the group members names) on white paper.
2. Write the game's name on white paper.
3. Each group member will draw a picture of a story event on white paper.
4. Cut colored paper into squares for a path.
5. Place the game name, squares for the path, pictures, and group name papers on the game board.
6. Rearrange the pieces until everyone agrees on

the look.

7. Glue everything to the game board.
8. Write start and end on a path piece.
9. Cut a different color paper into question cards.
10. Write questions about the story with yes or no answers on the form.
11. Glue the forms to the colored cards.

Play the game.

1. The one who rolls the dice with the highest number goes first. Continue in clockwise rotation.
2. Roll the dice and move your token.
3. Draw a card - but don't read it. Give it to the person on your right. They will read the question to you.
4. Answer yes or no. If you guess right you may stay on that square.
5. The winner lands on the End space.

Group Evaluation Rubric

1)	Neat	1	2	3	4	5
2)	Understands Q.A.Concept	1	2	3	4	5
3)	Use Cooperative Skills	1	2	3	4	5
4)	Uses 6" voices	1	2	3	4	5
5)	Plays game with manners	1	2	3	4	5

The Great Kapok Tree

Question:______________________________________

____

____

____

yes no

Appendix K

Story: The Great Kapok Tree

Musical / Rhythmic
Interpersonal
Songwriters

Jobs -
Material's Manager - Tells everyone where to stand, and hold the microphones.
Encourager - compliments others.
Checker - makes sure everyone is on task.
Worrier - makes sure everyone is done on time.
Recorder - writes the rubric after everyone agrees on it.

Directions:
1) Look at the story.
2) Discuss the story and try to make up a song to "Bingo".
3) Each person helps make up words.
4) The checker writes the words.
4) Practice with the microphones.
5) Write the rubric.

Group Evaluation Rubric Total Points ____________

1)	Tried your best to sing	1	2	3	4	5
2)	Understands Concept	1	2	3	4	5
3)	Uses Cooperative Skills	1	2	3	4	5
4)	Cleaned up area	1	2	3	4	5
5)	" 6 inch voice"	1	2	3	4	5

Appendix L

story: The Great Kapok Tree by Lynne Cherry

Bodily / Kinesthetic - Verbal / Linguistic

Acting

Jobs -
Material's Manager - holds microphone.
Encourager - compliments others.
Checker - makes sure everyone is doing his part on time.
Worrier-makes sure everyone isn't goofing off.
Recorder - writes the rubric after everyone agrees on it.

Directions -
1. Discuss story plot sequence.
2. Assign main characters.
3. Talk about an outline and begin acting it out.
4. Refine the play parts.

Group Evaluation Rubric Total Points_____

1) Loud enough voices	1	2	3	4	5
2) Understands Concept	1	2	3	4	5
3) Use Cooperative Skills	1	2	3	4	5
4) Do their jobs	1	2	3	4	5
5) Artistic Creativity	1	2	3	4	5

Appendix M

Logical / Mathematical

"Cast your Ring in the Hat!"

Jobs -
Material's Manager - Passes out and cleans up supplies.
Encourager - compliments others.
Checker - makes sure everyone is taking turns.
Worrier-makes sure everyone is playing fair.
Recorder- writes the rubric after everyone agrees on it.

Directions- First Game

1. Give each player 1 little hat.
2. Put all rings into the big hat.
3. Biggest number from throwing the dice goes first.
4. Throw the dice. Collect that many rings into your little hat.
5. Continue in order. The one with the most rings wins.

Second Game

1. Give each player 1 little hat.
2. Divide all rings equally among the players.
3. Biggest number from throwing the dice goes first.
4. Throw the dice. Put that many rings into the big hat.
5. The first player to run out of rings wins. You must have the exact number on the dice to go out. Otherwise you must wait until you do.

Appendix N

Body / Kinesthetic Intrapersonal

Magic Hats!

Jobs - Material's Manager - gets supplies.
Encourager - compliments others.
Checker - makes sure everyone is on task.
Worrier - makes sure everyone is writing and done on time.
Recorder - writes the rubric after everyone agrees on it.

1) Everyone picks a hat.
2) Look at it, wear it, think of who would wear it, why they would, and where they would wear it.
3) Write an adventure about your hat.
4) Have a group member listen to your story.

Group Evaluation Rubric

1)	Neat	1	2	3	4	5
2)	Understands Concept	1	2	3	4	5
3)	Uses Cooperative Skills	1	2	3	4	5
4)	Interesting Story!	1	2	3	4	5

Appendix O

Name__________________________________ # __________________

Through Grandpa's Eyes by Patricia Mac Lachlan

1) (intrapersonal) **Grandpa's house is my favorite because I see it through Grandpa's eyes. Tell what this means.**

2) (bodily/kinesthetic) **The sun wakes Grandpa by touching him, warming him awake. Feel the light on your face. Describe how it makes you feel.**

3) (musical/rhythmic) **Grandpa says," Close your eyes and look through my eyes to find out where Nana is." By listening, find the musical pin. under an item. Write the numbered item. Hide it for the next person. Make sure he is closing his eyes.**

4) (intrapersonal-visual/spatial-verbal/linguistic) **Close your eyes. Think about a person in your family. Now open your eyes, draw and describe him. Tell who it is.**

5) (bodily/kinesthetic) **Close your eyes and do 10 Deep Knee Bends without falling over.**

_______fell over ______ didn't fall over

6) (mathematical/logical - verbal/linguistic) **Grandpa could smell his breakfast cooking. Describe how to make cinnamon rolls - or describe how your 5 senses felt when we made cinnamon rolls.**

7) (bodily/kinesthetic- intrapersonal) **Close your eyes and feel the smooth piece of "thinking" wood. without looking at it. Open your eyes and draw it . Then look at it. Did you guess right?**

8) (bodily/kinesthetic - verbal/linguistic) **Smell the numbered items in the center. Write each number and next to it write what you think it smells like.**

9) (visual/spatial - mathematical/logical) **Draw breakfast on a paper plate. Make the back look like a clock by writing the time numbers. On the back write the names of the foods next to the time numbers in the same place they were on the front. This is your answer key.**

10) (musical/rhythmic) **Play the xylophone note. Try to listen and find it on the little piano keyboard. Write the note letter next to the xylophone number on the worksheet.**

11) (bodily/kinesthetic - visual/spatial) **Use clay to make a head profile like the ones on a coin. Draw it.**

12) (bodily/kinesthetic - verbal/linguistic) **Close your eyes and feel the fan on your face. Write how it feels.**

13) (musical/rhythmic) **Write as many names as you can, of things that you can recognize by their sound without seeing it.**

14) (visual/spatial) **Grandpa smells the paint but can't tell the color. His grandson tells him that blue is like the sky. Nana says blue is like Grandpa's eyes. Name a color and describe it to a blind person - so he can "see" it in his own way.**

15) (bodily/kinesthetic, mathematical/logical) **Close your eyes and pour water from one cup into another without spilling by putting your finger inside the rim of the cup. How many tries did it take?**

16) (bodily/kinesthetic) **Use the braille alphabet typewriter to write a "secret message" to a blind person. Try to make it funny.**

17) (musical/rhythmic) **How does the music and words tell a blind person when something is dangerous, funny, happy, or sad on TV?**

18) (intrapersonal-bodily/kinesthetic) **How did Grandpa know that John needed a haircut?**

19) (intrapersonal - verbal/linguistic) **Do you think Grandpa secretly really knew he was turning on the light when he put John to bed? Why?**

20) (intrapersonal - verbal/linguistic) **What did John mean when he said," Nana's voice smiles to me because I'm looking through Grandpa's eyes."**

Appendix P

Bodily / Kinesthetic
Visual / Spatial
Soap Carving

Jobs - Material's Manager - passes out soap and knives.
Encourager - compliments others.
Checker - makes sure everyone is on task.
Worrier - makes sure everyone is safe.
Recorder - writes the rubric after everyone agrees on it.

1. Pass out the soap and knives.
2. Wait until Mrs. Eliason explains the safe way to do it.
3. Draw (carve a line) a picture on the soap with a pencil.
4. Carve the line deeper with the knife.
5. Carve the soap. Make sure to put the shaving in the wastebasket.

Group Evaluation Rubric

1)	Neat	1	2	3	4	5
2)	Understands Concept	1	2	3	4	5
3)	Uses Cooperative Skills	1	2	3	4	5
4)	Do their jobs	1	2	3	4	5
5)	Artistic Creativity	1	2	3	4	5

Appendix Q

PORTFOLIOS

DEAR PARENTS,

THIS YEAR YOUR CHILD WILL BE CREATING A PORTFOLIO. INTO THIS PORTFOLIO WILL BE PLACED VARIOUS PIECES OF WORK THAT YOUR CHILD HAS DONE IN CLASS. THESE PIECES WILL INCLUDE , BUT NOT BE LIMITED TO, LEARNING LOGS, REFLECTIVE JOURNALS, GRAPHICS ORGANIZERS, GRAPHS, TEACHER MADE TESTS, ASSIGNED PARAGRAPHS, AND CREATIVE WRITING. SOME OF THESE WRITINGS WILL BE ROUGH DRAFTS AND SOME WILL BE ONGOING PIECES. OTHER PIECES WILL BE GRADED OR HAVE COMMENTS FROM THE TEACHER ON THEM. THE STUDENTS WILL BE ASKED TO EDIT, COMMENT, AND OR EVALUATE SOME OF THE PIECES.

THERE ARE MANY REASONS WE FEEL THAT IT IS IMPORTANT FOR YOUR CHILD TO CREATE A PORTFOLIO. IT ALLOWS THE STUDENT, TEACHER, AND THE PARENT TO SEE THE GROWTH OF THE STUDENT THROUGHOUT THE YEAR. IT ALLOWS THE STUDENT TO TAKE OWNERSHIP OF WHAT HE OR SHE HAS LEARNED AND TO SELF ASSESS WHAT HE OR SHE STILL NEEDS TO WORK ON IN ORDER TO DO BETTER. A PORTFOLIO SYSTEM ALSO ALLOWS THE TEACHER TO SEE WHAT AREAS THE STUDENT NEEDS HELP IN AND HOW BEST TO ADAPT INSTRUCTION TO FIT THAT STUDENTS NEEDS. A PORTFOLIO HELPS THE PARENT SEE THEIR CHILD'S STRENGTHS AND SEE HOW THEY CAN BEST HELP THEIR CHILD TO DO BETTER. HOPEFULLY, THE USE OF A PORTFOLIO WILL ALSO BUILD SELF ESTEEM AND MOTIVATE THE STUDENT FOR FUTURE LEARNING.

AS AN EFFECTIVE WAY OF CREATING A FULL SPECTRUM PORTFOLIO FOR YOUR CHILD, EACH WEEK I WILL ASSIGN A CATEGORY OF WORK SUCH AS: BEST WORK, HARDEST ASSIGNMENT, EASIEST ASSIGNMENT, MOST CREATIVE WORK, MOST ENJOYABLE ASSIGNMENT, ASSIGNMENT FROM WHICH THE MOST WAS LEARNED, ASSIGNMENT THAT ALLOWED THE EXPRESSION OF A SPECIAL TALENT. ON FRIDAY YOUR CHILD WILL PUT A PIECE OF WORK IN THE PORTFOLIO THAT BEST FITS THAT CATEGORY. THAT WILL COVER A QUARTER.

ONCE A QUARTER, AT THE END, I WILL CONFERENCE WITH YOUR CHILD ON HIS OR HER PORTFOLIO.

YOU ARE INVITED TO CALL ME TO MAKE AN APPOINTMENT TO SEE YOUR CHILD'S PORTFOLIO AFTER EACH QUARTER IS OVER.

I AM LOOKING FORWARD TO A YEAR WHERE YOUR CHILD ENJOYS OWNERSHIP OF HIS OR HER WORK AND I ENJOY BEING PART OF THAT PROCESS.

SINCERELY,

Appendix R

PORTFOLIO REVIEW

☺☺

Date of Review:

Name of Reviewer:

Two Thumbs Up:

👍👍

One Wish:

☺

Appendix S

☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺

PARENT, CHILD, TEACHER, CONFERENCE

Dear Mom and Dad,

I have been working very hard on putting together my portfolio this year and I would like to use the parent and teacher conference to show you all the growth that I have worked for this last quarter.

Mrs. Albero has invited me to attend this conference with you so I can show you my portfolio and explain first hand all the exciting work that I have completed.

I am looking forward to this time with you and my teacher.

Love,

☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺☺

Appendix T

Dear Mom and Dad,

Now it is our turn to work together on a journal strand about our student, parent, teacher, conference.

We will use the strand; We observe, we think, we have questions.

I am looking forward to writing this together and when we have completed this journal strand I will bring it back to school so Mrs. Albero can read about our thoughts.

The intelligences that we will use as we complete this journal are; verbal linguistic, interpersonal, and intrapersonal.

Love,

Appendix U

Cricket in Times Square

Mathematical / Logical Intelligence

- * Choose one of the following topics.
- * Be sure to hand in your project this week.

1) Draw a map of the real Times Square in New York.
2) Write 5 money problems that might actually happen at the news stand.
3) Make and fill in a Venn Diagram comparing any 2 characters.
4) Create a word Search on books, newspapers, and magazines.
5) Figure out the distance between New York and any 5 other major big U.S. cities.
6) Make up a train schedule. Include at least 4 cities, 5 train stops a day, for 7 days. Cities may be real or pretend.

Appendix V

Cricket in Times Square

Bodily / kinesthetic Intelligence

- * Choose one of the following topics.
- * Be prepared to present it to the class.

1) Demonstrate in front of the class something you learned from the book.

2) Create a pantomime of an important part of the book.

3) Make a hand puppet. Be prepared to put on a mini show.

4) Make a jigsaw puzzle for the book. Put in a container. Have a friend put it together.

5) Make up a movement game any character might have played. We'll try it at recess.

6) Create a sequence mobile for this story.

Appendix W

Cricket in Times Square

Verbal Linguistic Intelligence

- * Choose one of the following topics.
- * Be sure to hand in your project this week.

1) Make up a 20 question true or false quiz about this book. Be prepared to give it to a partner, group, or the class.

2) Make a list of words (at least 10) and definitions important to this book.

3) Write a summary for chapter 1 or 2.

4) Write an alphabet story using the title of the book or a character.

5) Write about the author and illustrator.

6) Write a report on Time Square, crickets, or Chinese customs and culture.

Appendix X

Cricket in Times Square

Visual / Spatial Intelligence

- * Choose one of the following topics.
- * Be sure to hand in your project this week.

1) Make a poster to "advertise" Cricket in Times Square . Color it.

2) Use clay to make a model of an important object or character in this book.

3) Make a picture of a character, using the letters of his / her name. Color it.

4) Paint a water color picture of an important part in the book.

5) Draw a picture of Tucker's home. Use your imagination. Color and label it.

6) Draw a picture of the news stand. Color it. Label it if necessary.

7) Create a cartoon sketch of the mouse, cricket, and cat. Color it.

Appendix Y

Cricket in Times Square

Intrapersonal Intelligence

- Choose two of the following topics to write about.
- Put both in your Journal. Date them.

1) Which character would you like to invite home for dinner? Tell why!

2) Does the main character remind you of another character from a movie or television program? Who, how and why?

3) Could this story take place in a different setting? Describe that setting using 4 senses.

4) Predict the future of any 2 characters in 10 years.

5) If you could change one thing about the book, what would it be and why?

6) Find a paragraph that has a main idea and at least 3 details. Tell the page and paragraph. Write the main idea and details in your journal.

Appendix Z

Cricket in Times Square

Musical / Rhythmic Intelligence

- * Choose one of the following topics.
- * Be prepared to present to a partner, group, or the class.

1) Make up a rap or song for any chapter.

2) Pantomime a cricket dance.

3) Play an instrument. How does this song fit into this book?

4) Write a report on any classical opera or musician. Bring in a tape to share his music with the class.

5) Pick out a taped song you feel goes with this book. Play it. Tell the class why you chose it.